423, 241

Egypt	MR1
Turkey	MB1
Iraq	MH1
Syria	MD1
Lebanon	ME1
Historical Palestine	MF2

/For an account of the organization of agriculture and forms of land tenure and an historical summary of changes in agricultural systems and methods in the countries of the Middle East, see 66: Bonné, M1 Middle East, category 116 as follows: Egypt - pp. 127-129, 192-196, Turkey - pp. 129-130, Iraq - pp. 130-133, 189-192, 202-203, Syria, Lebanon and Palestine - pp. 133-135, 188-189, 203-204./

133
132
● 241
231
31
433
491
496
505
463
135
361

Syria MD1

[For information on the topography, climate, agriculture and commercial crops, irrigation, stock raising, natural resources, production and supply, waterways, railways, and roads of the valleys of the Tigris and Euphrates between the plateau of Asia Minor and the Persian Gulf, discussed as one geographical unit, rather than by political boundary, see, Ml Middle East, cat. 116, 21: Fisher, pp. 340-370.]

[For information on the topography, climate, agriculture, mineral wealth, railways, settlement pattern, productive capacity of the economy, and trade of the Levant coastland, see Ml Middle East, cat. 116, 21: Fisher, pp. 371-414.]

[For information on the topography, occupations and relative productivity of the desert plateau, and of the Arabian Peninsula as a whole, see Ml Middle East, cat. 116, 21:Fisher, pp. 427-449.]

The Syrian economy in 1945 was distinguished by its relatively low production of a generally poor quality. It lay in a state of decadence and stagnation that could only have been remedied by energetic action by the authorities in power. It was a virgin country waiting for people willing to work hard to develop its resources in the fields of agriculture, industry and commerce. 433

Agriculture in Syria occupies first place, whether considered from the point of view of production or the number of those who earn a living from it. It produces the largest part of the country's exports and supplies the national industries with raw materials. But, despite its preponderance over other economic activities farmers remained up to 1945 dependent on ancient methods, and were ignorant of such modern techniques as the use of machines and fertilizers. Syrian agriculture suffered helplessly from the crop rotation system, from natural pests, insects and diseases, from rain variations and the unscrupulousness of money lenders. 433 241

As to industry, it was in its infancy, still feeling its way and lacking encouragement, protection, adequate studies, knowledge and experience. 433

Nor was commerce in a better situation than agriculture and industry. During the second world war, Syrian trade lost its relations with many of the belligerent countries, and emerged from the war crippled and hampered by the restrictions of exchange control. In addition, the direction of Syrian commerce was not in the hands of Syrian nationals; the larger part of foreign trade, both exports and imports, was handled through Beirut. As a result Syrian merchants lost direct touch with countries abroad and Syria became in effect an internal market dealing in retail with neighbouring markets. Commercial agencies were in the hands of non-Syrians up to the extent of 95 per cent of the total. To complete the picture we should mention that a large part of banking operations with foreign countries took place in banks situated outside Syria, and that the purchase and sale of foreign exchange accruing to Syria was effected in the Beirut market. To conclude, control of Syrian external trade was in non-Syrian hands and the Syrian economy, in consequence, was forced to lose large sums in the form of expenses, commissions, and profits which were paid abroad for mediation in purchase and sale transactions. 439 457

14. During the period under discussion the Syrian Government exercised great effort with satisfactory results; it made a be- 185

irrigated, and the Jagjag and the Khabur could never irrigate such 811
an area. Irrigation is the second factor involved in determining 8121
whether the land is cultivable or not.

II. Qada of Dijla

Turning to the Qada of Dijla, we find that the entire region 1321
has sufficient rainfall, two rivers and many springs in the villages. 133
In fact, the abundance of rainfall in the northeastern part of the
Qada known as Jazirat ibn Amr, makes the growing of summer crops [241]
hazardous because the hot, dry period is too short.

The lower part of the Qada, from Tal Koshak to Dāmir Kapu, is similar to the Qada of Qamishli. The land is flat and precipitation, though relatively abundant, does not compare with the more mountainous regions of Dijla.

III. Qada of Qamishli

The Qada of Qamishli with the lower part of Dijla, extends 634
from Tal Koshak on the Iraki border, comprising the cities of 811
Qamishli, Amuda, Derbassiya, to Ras el Ain on the Khabur which belongs administratively to Hassakeh. This region, some 200 kms. in length along the railway line and the Turkish border, is the best developed and most productive of the Jazirah.

In point of cultivability, it is divided into two parts: 811

1. A region bounded by the railway and a line running about forty kms. south and parallel to it, from the river Rad to Tal Brak to Tal Tamr on the Khabur.
2. The region south of this fictitious line.

This division is based on the amount of rainfall and the experi- 811
ence of farmers during the last twelve years. It is certain that the [1321]
further one goes from the Turkish mountains, the less is the rainfall. 241
That is why Tal Brak, about 40 kms. south of Qamishli, is considered the last profitable area for rain-fed farming. In the last few years when tractor cultivation expanded greatly and lands became scarce, new farmers cultivated the lands south of the parallel line down to Hassakeh and to a point about 40 kms. north of Rakka, and learned at their own expense that it does not pay unless the crop is barley and is carried on as a sideline to a principal enterprise in the northern regions.

A vast area lies south of the Rad to the Iraki border toward the 811
Sinjar Mountains. Farmers have been prevented from cultivating 241
[479]
132

119 it because of bloody disputes between the Shammar and Tay tribes.
311 The land is poorer than in the north and the rainfall is much scarcer.
241 Farmers who managed to plant barley on the fringes of the disputed
182 land in the bad year of 1951 lost heavily. It is improbable that an
average year would give much hope of profit.

Ras el Ain, though on the railway line, has less rainfall than Kamishli, Amuda, or Dirbassiya because the mountains recede north into Turkey. Dry farming is profitable less than 20 kms. south of Ras el Ain.

IV. The Khabur Valley

123 The Khabur river, though rising in Turkey, is fed by springs in Ras el Ain and flows southward for about 150 kms. within the Jazirah before it enters the Mohafaza of the Euphrates below Markada.

241 For about 20-30 kms. below Ras el Ain, the land is used for
811 cereals, mainly barley, with varying degrees of success. But
south of this area and down to Hassakeh, dry cultivation becomes risky. South of Hassakeh and to the east and west, dry cultivation becomes entirely out of the question because rainfall, already insufficient at Hassakeh, falls off sharply.

312 The inadequate rainfall is offset to a certain extent by the possibility of irrigation from the Khabur. Traces of old dams are apparent in several places, and canals which carried the waters from the dams are visible. History and legend leave no doubt that the valley was much more extensively exploited in former times than it is now.

312 Recently, when the price of rice rose during the War, farmers
406 from the cities of Jazirah in search of irrigated land, began renting
lands along the Khabur and installing motors and pumps. The necessary outlay of capital for any project of adequate size was substantial, not less thanLS 150,000, and the price of rice fell after 1946, so that perhaps not more than fifty irrigation projects existed up to 1949. It remained for the cotton boom of 1951 to boost this number to around 200 pumps.

The average size of pumps is 8" and the area irrigated by
a pump of this size is around 500 dunums (125 acres). On some
312 projects, where land is available, this area for summer crops is
241 supplemented by an area twice this size in wheat and barley.
242 But lands on both sides of the river rise steeply and rarely can an
owner of an irrigation project find enough lands to use the pumps

full time winter and summer. This is one of the reasons why most 812
projects on the Khabur have been failures. The overhead costs are 241
very heavy in relation to the land available. 242

The Government has an irrigation project partly in operation 812
which will irrigate when completed an area of about 100,000 dunums 658
(25,000 acres). Other projects are under study but their execution will be postponed indefinitely since the Government lacks the necessary capital.

To summarize, it would appear that not only all cultivable 811
lands in Jazirah are already cultivated, but that farmers, in search of lands, have started using marginal lands with insufficient rainfall, and unless the price of cereals keeps at the level of last year there will follow in the coming two years a gradual decrease in the area planted, with heavy losses to individual farmers.

POPULATION OF JAZIRAH

During Turkish rule and up to the French occupation, Jazirah 311
was a wasteland controlled by Bedouin tribes whose submission to 619
the Turkish law was nominal.

I. The Arab Tribes

The tribes, dominated by Shammar, ruled the land and spoiled 619
it, frustrating all attempts at agriculture. They lived on sheep 231
and camel breeding and charged tribute from merchants for protec- 233
tion, each tribe within its boundaries. Moslem and Christian 428
families from Mardin and Nisibin owned lands around what is now 423
Kamishli, Amuda and Dirbassiya, and they traded with the tribes, buying their wool, samneh, and hides and supplying them with their needs and credit. The ownership of land for agriculture seems to have been incidental to the commercial activities of these families.

The tribal boundaries established during the Ottoman rule are still effective. Shammar claims the right of grazing from the Iraqi border at Tal Koshak to Tal Alu and south to Fadghami on the Khabur. There is another small concentration of a Shammar branch around Derbassiya known as Shammar Ezzor.

The neighbor of Shammar to the west is the Tay tribe. Its lands extend from Kubur el Bid and Kamishli south to Tal Brak. The tribe took to agriculture relatively early and in its area are some of the best lands of Jazirah.

619 To the south of Tay is the Jubur tribe. This tribe is composed
241 of two branches, the Jubur of Jagjag concentrated around Tal Brak and south to Hassakeh, and the Jubur of the Khabur from north of
233 Hassakeh to Fadghami. The Jagjag Jubur have taken to growing cereals besides grazing, but the Khabur Jubur find little employment in agriculture because their area is arid and those who do not work on irrigated lands are mostly sheep grazers.

619 Another big tribe migrating between the Euphrates and Jazirah
221 is the Baggaret el Jabal. This tribe is completely nomad. It spends the winter in the plans toward Deir Ezzor and migrates in the sum-
233 mer to Jabal Abdel Aziz. It used to cross the Khabur to graze in
721 Jazirah but a dispute arose with Shammar Ezzor in 1949 over the ownership of some villages below Derbassiya, and supported by the Kurds, Shammar was able to drive Baggara back across the Khabur.

221 Of these tribes mentioned, Shammar is still mostly nomadic
621 though its lands in the north are good for agriculture. The Tay tribe is completely sedentary, Jubur Jagjag have become mostly sedentary, while Jubur Khabur are in a measure nomads because of the unsuitability of their lands, and the Baggara are completely nomads.

619 In tribal politics, Shammar stands alone. Tay and the Jubur
721 are traditional allies against Shammar. The Baggara are enemies of Shammar and friendly to Jubur. Raids of Shammar on Jubur are frequent especially in the region of Fadghami. The last big conflict between Shammar and Tay occurred in 1951 when over a hundred persons from the two parties were killed in a fight over the ownership of the lands south of the Rad.

624 The Bedouin Sheiks of the different Arab tribes formerly re-
664 ceived money grants from the Ottoman Government under the guise of expenses for the maintenance of law and order in their regions. These grants were in essence bribes to keep the Sheiks quiet. Unfortunately, the French continued this system, and relied on the Sheiks to control the tribesmen by giving the Sheik a fixed annual salary, each according to his importance. In this way, the Government implicitly renounced its right to deal directly with the individual Bedouin and dealt with him only through his Sheik.

This situation, which lasted until about a year ago, strengthened the Sheik enormously in the eyes of his tribesmen, and the Sheik
622 invariably exploited the situation to his personal benefit. Thus,
425 in the Bedouin districts of Jazirah, the rapid development and
427

562 But proofs of their increase are the hundreds of new villages tilled
361 by Kurds and built by them in the regions of Kubur el Bid, Amuda,
and Derbassiya.

621 The Kurds like the Arabs, follow a tribal organization. Starting
221 from the east, the Koshar tribe, mostly nomadic but recently turning
619 to agriculture, dominates Jazirat ibn Amr, i.e., the region of
Deink and Ain Diwar. The Koshar border Shammar on the south and
721 they are on fighting terms because Nayefz Pasha, chief of the Koshar,
killed the brother of Dham, chief of Shammar. Next to the west is
the Shitiya tribe around Kubur el Bid. This tribe is old in the region.
[291 Its members are Arab in their dress and, in contrast with all the other
191] Kurdish tribes, they speak Arabic as well as Kurdish. Its lands lie
west of Shammar and more within the Tay region but its relations
with both are friendly.

619 Qamishli, which is a Tay region, includes villages of the Pinar
861 Ali tribe. But west of Qamishli comes a solid bloc of 100% Kurdish
villages extending for more than sixty kilometers and reaching to
the west of Dirbassiya practically uninterrupted by any Arab village.
[134] This area is undoubtedly one of the most fertile of Jazirah. Within
it, the Dakkuriya tribe is centered around Amuda, then follow the
Kikiya around Dirbassiya, and the Milliya from Dirbassiya to Ras el
Ain.

463 The Kurds are considered very good farmers. They plow and
241 plant with mules but they rent combines for the harvest. This is
because they have learned that combine harvest is more economic-
577 al. The Kurd is also greatly praised for his character. He is truth-
511 ful, honest, and upright in his dealings. He keeps his word and the
merchants of the Jazir trust him completely. He is also clean in
his home and in his dress, and though Bedouins reproach him for not
being generous in his house, his standard of living is higher than the
Bedouin and his villages are much cleaner.

622 The Kurds owe allegiance to their Agha who takes the place of
the Bedouin Sheik. But this relationship is weaker than is the case
423 of the Bedouins. The successive Governments did not give the Agha
grants of money or similar authority over his tribesmen in the manner of the Sheik. The Kurds were considered from the start sedentary people subject directly to Government laws. That is why most of the Kurds own and till their lands in their own right.

6: Government of Syria--II G-4 (no date) 1952 MDI Syria MDI

CROPS AND AGRICULTURE IN JAZIRAH

I. Dry Farming

Dry farming is by far the most important activity of Jazirah. 241
The first tractor and combine were introduced in 1936 by Shahine 311
Bey Maluf of Zahleh. Before that time agriculture was the business
of the peasants. The town inhabitants of Jazirah took no interest in
it. The area cultivated was restricted to a few kilometers south of
the railway line in what is called the Old Villages. The political
troubles in 1936-37 and the low prices of wheat and barley before
the War did not encourage capitalists inside Syria to invest their
money in Jazirah. Furthermore, agricultural machinery was new to
most people who did not understand its economics or how to run it.

a. Expansion in the Use of Machinery 1936-1952

The War doubled the price of wheat in its second year. The 407]
crop of 1940 was sold for LS 50-55 a ton at Aleppo. The French 439
bought it for LS 120 in 1941. The Office des Cereales Panifiables (O. C. P.) fixed the price at LS 350 in 1943. During these years the dollar was available at the official rate of LS 2.20 and importation of machinery from the U. S. was possible. The number of tractors increased to about 60 in the winter of 1943.

The crop of 1943 was exceptionally good and the O. C. P. imported some 50 tractors and a similar number of combines which reached Jazirah during the harvest season. The machines were first rented to the farmers and then sold to them. They represented the first large-scale importation of machinery to Jazirah.

Importation of machinery in the following two years became
difficult as a result both of limited availability and of dollar shortage.
But by the end of the War dollars became again available at
the official rate and large numbers of tractors were imported in 1945
and 1946. The importation of agricultural machinery has become
a steady and continuous flow in spite of the sharp rise in the dollar
rates and the price of wheat, though below 1943, still makes large-
scale exploitation profitable. Recently the Government through 654]
the Agricultural Bank has helped the farmers import and buy on [452

435 430 compete on world markets. The cost of production of wheat in the Jazirah by machinery is much higher than the cost of production in the major producing countries of the world, such as Canada, the U. S. A. and Australia. Since the average annual export of wheat in Syria does not exceed 250-300 thousand tons, and it is Jazirah which produces this exportable surplus, the rest of Syria taking care of internal consumption, the costs of Jazirah production become the determining factors. Some causes of the higher cost of production in Jazirah have been mentioned above.. Others, such as the difficult transportation will be discussed later. But there is no doubt that unless the different defects controlling Jazirah agriculture are removed, and they can be removed by Government enlightened action, production will drop sharply when world prices decline as they might do if world tension is removed.

e. Two Types of Agriculture in Jazirah

241 It should be stated that two different methods of production prevail in Jazirah, cultivation by peasants using mules and cultivation by machinery.

1. Peasant cultivation accounts for perhaps 50-60 per cent of the crop, and machinery cultivation for the remainder. Both types suffer from some of the obstacles mentioned above, such as bad credit and transportation systems, bad seed, insecurity as to prices, and lack of agricultural guidance. But inspite of all, the peasant farmer will continue to plow his tract of land no matter how circumstances change because farming is his occupation and he knows no other. The crop he produces is enough for him and his family, and the surplus he sells to the Jazirah towns to feed the city people. The drop in prices will simply mean a lower standard of living for him and his family.

2. The cultivator by machinery suffers from causes in addition to those of the peasant. He is a capitalist who has invested his mone in machinery, seeds, fuel and wages and he has to show a profit at the end of the year to pay for his investment and to live at a decent standard. His investment should give him returns comparable to other fields of endeavor, otherwise he will not continue in his present

job. It is this mechanized farmer-investor who has produced the surplus wheat exportable from Jazirah. 241 Any attempt to reduce his activity by limiting the area of land cultivated by him, or by artificially reducing the prices of his crops for the benefit of the State monopoly, or by ignoring his demands for low production costs, will result in his leaving the job for other occupations. It should be noted also that this type of farmer is in most cases not tied to the land. He usually rents the land he cultivates, and even if he owned land, it is only a small fraction of the area he plants annually. It is always easy for him to rent his lands to peasant farmers and go back to the city.

3. Estimate of a Capitalist Agricultural Enterprise and the Area it needs: 407 A complete outfit of agricultural machinery belonging 454 to a farmer in Jazirah usually consists of the following. A fifty 241 horsepower tractor, a disc plow, a cultivator, a drill, a combine either tractor drawn or self-propelled, a jeep, a truck , and a regular repair shop for immediate repairs in the field. He will have a mechanic and two drivers on an annual basis. The number will rise to about ten during the plowing, seeding, and harvest seasons. This means an outlay of LS 100, 000 in capital to which is added LS 25,000 for the price of seed, fuel, and miscellaneous expenses. To meet the depreciation on the machinery, cover the annual expenses and interest, and earn a profit, the farmer must plant as large an area of land as his equipment can handle. It is found that he has to plant some 5, 000 dunums annually or better still 6, 000 in order to find his occupation remunerative. To do this, he has to own or rent land double this area since all cultivation in Jazirah is on a two year rotation basis.

II. Irrigated Agriculture

The Encyclopedia Britannica relates that the region of Nisibin, 241 i. e. Qamishli, was up to the eleventh century planted with fruit trees and that it lost its orchards due to forcible conversion to wheat imposed by the Caliph, as well as ravages by the Bedouin tribes.

6. Government of Syria--19 G-4 (no date) 1952 MDI Syria MDI

a. The Region of Deirik

241 In the region of Deirik, the Zarkan river and numerous springs
490 in the villages make irrigation possible over vast areas. The region
began to be developed recently when the road was partly constructed.
312 Rice is an old staple, but in the last two years it have given place
to cotton. However, rice may resume its former place since cotton
diseases have become so widespread.

b. The Jarrah

The Jarrah river flows through Kubur el Bid and irrigates the country around it. Its waters were used for rice plantations, and recently for cotton. In winter its waters flow into the Rad.

c. The Jagjag

133 The main river of northern Jazirah is the Jagjag. Its sources are about thirty kilometers north of Kamishli, in a gorge in Turkey. It flows through Nisibin and Kamishli, crosses the Jazirah plain and empties in the Khabur at Hassakeh. Its total length is about 100 kms. and its average flow is 3 cubic meters per second.

3121 In Turkey and Kamishli, the river has several beds. The Turks,
425 unable to exploit it fully in their country because of its short flow
there, follow the practice of changing the river from bed to bed in the summer months, so that farmers in Jazirah do not know when the water will be available to them. This uncertainty has lead the villages which have a right to the water to sell their rights for one or more years to individuals on good terms with the Turkish authorities. These individuals in their turn bribe the Turks to direct the waters in the bed which leads to their lands. One family in particular has obtained a sort of monopoly on the waters of the Jagjag in Qamishli. The Asfar-Najjars buy the water rights from the villages for nominal sums and then try to reach an understanding with the Turks. Since they have one or two competing groups in Qamishli, the Turks usually get paid by both parties and satisfy none entirely. The Asfars manage however to get the biggest share.

3121 Such an unstable situation does not lead to steady irrigation
development along the lines of orchard planting. The farmer is
241 lucky if he can grow one crop of rice or cotton with the present

312 241 fluctuations in water flow. Up to 1950, all the water of Jagjag was used for growing rice. In 1950-51, more emphasis was given to cotton. This year it is half cotton and half rice.

312 648 The Turks started a project for diverting all the waters of the Jagjag from Syria to Turkey. They began building tunnels to carry one quarter of the waters east above Kubur el Bid, and the rest to the plains above Amuda and Dirbassiya. The Syrian Government objected and negotiations began in Ankara. The Syrians believe that they have reached an understanding with the Turkish authorities to divide the river waters equally. The Turks did not sign the agreement, claiming that they want a full agreement on water rights covering all common rivers and especially the Orontes. They are afraid that Syria might use all the waters of the Orontes in its irrigation projects. Since Syria holds this arm, the Jagjag dispute will be solved equitably.

312 241 It is difficult to estimate the area irrigated yearly by the Jagjag. The waters are used only for summer crops, and last year about thirty thousand dunums were planted to cotton. When the plantation is rice the area is nearer to ten thousand dunums. There is of course always a certain amount of land devoted to vegetable growing for the needs of the city.

d. Underground Water

312 Recently a few enterprising farmers tried to solve the problem of dependency upon Turkey for irrigation water by digging for water on their own lands. An Armenian outfit from Aleppo with a boring machine of local construction dug several wells in the region of Qamishli and Amuda. Three of the wells in the villages of Tal Ahmad and Tal Anbar near Kamishli were successful. Water to run a 4-inch pump was found at a depth of 18 meters. The other holes around Amuda were not so successful. Water was not found at a depth of 70 meters. These experiments are of course inconclusive and sufficient underground water may be found to be abundant in Jazirah. Further studies are needed.

a. The Khabur

133 The largest source of irrigation water in Jazirah is undoubtedly the Khabur. Its average flow is 52 cubic meters per second which

133 makes it the biggest river in Syria after the Euphrates. A short description of the Khabur valley was given earlier and the great possibilities of the river remain undeveloped. Unlike the Euphrates, especially in its lower reached, the Khabur valley is narrow. The alluvial plain does not extend more than five hundred meters on each bank in most places and then the land rises to a height of 10-50 meters over a distance of severl kilometers.

8/24 406 The alluvial plain along each bank has been more or less irrigated and planted by primitive methods such as the kard and the naqourah or dulab since old times. The kard can irrigate about fifteen dunums and the naqourah, if in good condition, can produce a flow of less than two inches of water and raise it to a height of a maximum six meters which is the diameter of the wheel. More prosperous Bedouins combine two or three naqourahs on the same axis and got a flow of about 3-5 inches. The naqourah is evidently a cheap way to raise water, but its construction is costly. Assuming that a Bedouin wants to build a naqourah on a new site, he has to erect a sort of a dam with stones on about half the river's width to raise the river's level and direct its flow towards his naqourah. Since stone is not abundant along the Khabur and has to be carried long distances, it becomes the job of specialized carpenters to construct the wheel, erect its supports, and balance it. This may cost another LS 1,500. 416 The carpenter who constructs the wheel or naqourah becomes responsible for its maintenance and is paid yearly 11 percent of the yield of the land irrigated in lieu of wages.

2441 The staple crops of the Khabur were formerly wheat in winter and sorghum in summer. Sorghum was preferred to every other summer crop because it provides food for both man and beast. Lately, the naqourah peasants began planting sesame and in the last two years cotton, but reverted this year to sorghum and sesame as the main summer crops.

511 Unlike the Kurdish or even the Bedouin peasant of northern Jazirah, the Khabur peasant is very poor and primitive. Rarely does he 2441 own one cow to use for plowing. Usually two or more farmers join 427 to provide one team. For this reason the strip of land which he can cultivate for wheat or sesame does not exceed 20-30 dunums, of which half the yield goes to the owner of the land who provides water. This is to compare with 250-300 dunums cultivated by the Kurdish farmer, of which he has to pay only the rent of the combine for the harvest.

when the wheat crop fails, as it did last year, there is great hardship in all of the Jazirah. Debts remain largely unpaid, the value of land falls off sharply, and interest rates become unbearable. 243 511

The failure of a crop in Jazirah brings more hardship than is the case in other Mohafazas because Jazirah, with all the money revenue which accrues to it in a good year, has not arrived yet at the stage where it can save a part of this income to use in bad years. All the money revenue is immediately reinvested in machinery and in expansion of the area planted with additonal sums borrowed from the banks or from Aleppo merchants. 454

The point is reached where further expansion has become difficult, and the situation will become more or less stabilized so that some of the income will be put aside for emergencies in the coming few years. But even when savings reach a high figure, the problem of monoculture is not solved.

Jazirah at present does not produce the necessary vegetables and fruit for its own consumption. It imports them from Aleppo, Homs and Damascus. That is why the cost of living in the town of the Jazirah is one of the highest in Syria. Aside from the price of meat and samneh, everything including room and house rents, is more expensive than in the other big towns of Syria. Even flour is sold to bakers by the town municipalities at the same price for which it is sold in Damascus. 511 241 ● 488

In former times, however, Jazirah produced great amounts of fruit, vegetables and dairy products. Its lands are very well suited to raising cattle and beef, an employment more profitable than wheat growing. A diversification in the use of land will make for a more balanced and prosperous economy in Jazirah. But the Jazirah farmers are not to be blamed entirely for the kind of agriculture prevailing. Circumstances beyond their control, connected primarily with the problems of land ownership and tenure, have largely imposed this type of monoculture upon them. These problems will be discussed in the following section, but it can be said in passing that the farmer cannot be expected to invest money in buildings for cattle raising, or in digging wells to provide irrigation for vegetable growing, or in planting orchards on lands to which he has no title or whose title is subject to constant disputes over boundaries with the neighbors and lately by decree-law 96 with the State. 488 241 454

often an agent of the Aleppo merchant who furnishes the capital 438
and has the necessary warehouses in Aleppo and the commercial 441
knowledge and connections in the Syrian market and abroad to dispose of the crop at the best terms.

I. The Problem of Storage and Warehouses

The dependance of Jazirah on Aleppo merchants is such that 488
until the present time there is not a single warehouse or silo to store 241
wheat for a few months in all Jazirah belonging to an individual merchant or big farmer. During harvest season, the wheat is stacked in the open near the railway stations and left without cover until it is shipped to Aleppo. The hangers of the stations can only hold a small part of the crop. The Mira built a few depots but it is not known whether they will be put at the disposal of merchants.

The special conditions of cultivation in Jazirah connected with the problem of credit and land ownership make the transport of wheat from the farms to the stations during harvest season a hectic affair. This is caused by two reasons: in the first place, the farmer is always in need of money and has to ship his crop quickly to Aleppo to sell it, and, secondly, even if the big farmer is not in need of money, he does not feel it is safe to keep his crop in the villages. In most cases, he is only a tenant and it does not pay for him to construct a depot on land, he does not own. Even if he owned the land, he would hesitate to keep his crop away from the market until the winter months when he might need money but might find himself unable to transport his crop because of bad roads.

The logical solution would be to construct warehouses in the towns or near the stations, but, here again, the lack of capital prevents the accomplishment of this job.

The Kurd is the only farmer who keeps a part of his crop on the 2141
land. As a good and thrifty peasant, he stores his seeds, the pro- 251
visions for his family and usually an amount of wheat equal to the seeds he planted. If anything remains, he sells to buy clothes and foodstuffs. The Kurd keeps the extra wheat he has in holes dug in the ground called "jifr". The hole is usually two meters in diameter and 2-3 meters deep. It is lined with "tibn" to keep the moisture away and the wheat remains in a good condition in it for several months. The peasant has a number of these jifrs depending on the

241 amount he has to store. The jifrs are usually dug around the village
251 to guard them from theft. The condition of the future wheat crop
in Jazirah becomes known by the end of March. At that time, if the
forcast is favorable, the surplus wheat stored in the jifrs is brought to
the market, but if the future crop is considered in a bad condition
the wheat remains stored to be planted in the fall.

The second most important item of Jazirah commerce is the summer crops of rice, cotton, sorghum and sesame. They follow the same pattern of wheat and barley.

II. Cattle and Sheep

489 Jazirah has an active trade in transit shipment of cattle and
331 sheep. Before the last few years, it was itself a provider of sheep.
The Bedouin tilled a part of the land and grazed his sheep in summer
221 and fall on the land around the village. In winter and spring he be-
233 came a nomad again and migrated with his flocks to the south and
east. It was customary to pass scores of villages in winter which were
completely deserted and the mud houses sealed with one guarding left
for the whole village. The expansion of mechanical agriculture reduced the grazing lands considerably and the number of sheep dwindled.

At present, sheep and cattle are imported from Turkey and Iraq. They cross the border on foot and are either smuggled in or pay customs duties. They rest in Jazirah and are fed, then transported to Aleppo by train, or, in springtime, on foot.

III. Imported Goods

438 The main imports of Jazirah are agricultural machinery and spare parts, textiles, fuel wood and building materials. Foodstuff which is not grown in Jazirah is also imported. Because no statistics are available, it is worthwhile to make a study of the volume and value of Jazirah commerce for the next few years as an indication of the development of the region.

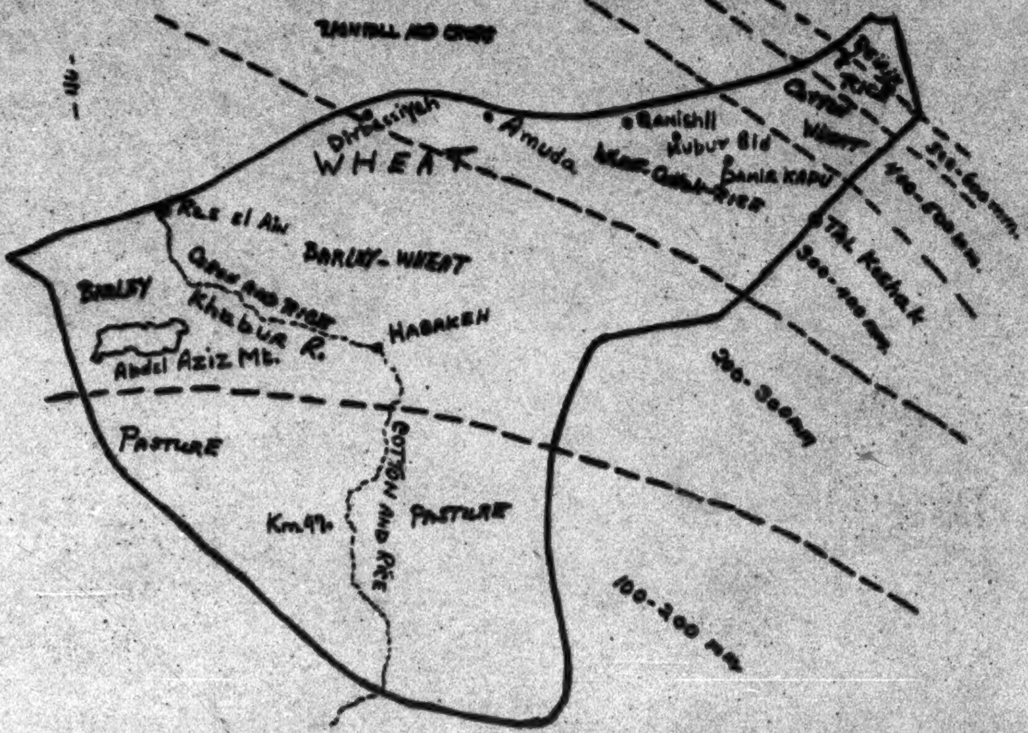
IV. Commercial Future of Jazirah Towns

The commercial future of Jazirah towns and especially of Qamishli is assured. Jazirah already produced in 1946 17% of the

6: Government of Syria--46 G-4 (no date)1952 MD1 Syria MD1

511
2441
361
132

RAINFALL AND CROP MAP OF JAZIRAH


RAINFALL AND CROPS
Derbessiyah
Amuda
WHEAT
Qamishli
Qubur Bid
Wheat-Cotton-Rice
Banir Kapu
Cotton Wheat
Rice
TAL Kochak
500-600 mm.
400-500 mm.
300-400 mm.
200-300mm
100-200 mm.
Ras el Ain
BARLEY-WHEAT
BARLEY
Cotton and Rice
Khabur R.
HASAKEH
Abdel Aziz Mt.
PASTURE
COTTON AND RICE
PASTURE
Km.92.

7:Lewis S-5 (ca. 1940-45) 1948 MDl Syria MDl

THE REGION IS ONE WHERE DESERT MERGES INTO THE SOWN. THE RAINFALL

132 regimen is Mediterranean in type, practically all the precipitation falling in winter, the summer being characterized by drought and great heat. In the east the rainfall is sporadic and unreliable and in most years is less in total quantity than in the west. Selemiya has a mean annual rainfall of 344 millimeters (13.5 inches). On the west-facing slopes of Jebel Bil'as rainfall is relatively heavy, though highly variable, and it permits tree growth. The

311 present eastern limit of close agricultural settlement and of permanent unirrigated cultivation is near the 200-millimeter isohyet;[2] it was approximately the same in Romano-Byzantine times. Any further extension of agriculture to the east would mean great risk of crop failure and of increased soil erosion by wind and water.

134 In the cultivated west the soil is heavy and clayey, but farther to the east it is light and friable, with a high sand content and practically no humus. In Jebel Bil'as the soil is intermediate between these two types, liable to erosion by wind in summer and water in winter.

137 Over the greater part of the region the two main elements in the natural
132 vegetation are low xerophilous scrub[3] and ephemeral grasses which appear
[2.33] in early spring and wither away in summer. The roots and rootlets of both the permanent scrub and the annual vegetation help hold the soil in place. In Jebel Bil'as these types of vegetation are well developed, and the hills are favorite spring pasture grounds for the sheep of peasants and Bedouins. Isolated trees grow in the Palmyrene ranges far to the east throughout the area within the 200-millimeter isohyet, and even just to the east of it, in country believed to have a mean annual rainfall of less than 200 millimeters (7.9 inches). On the northwestern slopes of Jebel Bil'as tree growth is more abundant. Nothing demonstrates better the positive rainfall anomaly of the hills as compared with the arid plains to the north and south.

137 At the present time the landscape of Jebel Bil'as is at the best parklike, the trees being scattered, except in the valleys, where clumps of three or four grow together. Few trees are taller than 20 feet. The *Pistacia* genus is represented by *P. terebinthus* (probably *P. palaestina*) and *P. vera* (the pistachio tree). The wood of these two trees, hard and slow-burning, is much valued as a fuel. Scrub oak also occurs, and in wadi bottoms thick-leaved evergreens. Shrubs and herbaceous plants are scattered everywhere.

IRRIGATION

241 The long summer drought makes irrigation necessary for most crops

---

113 [3] A full account is given by M. Zohary: Geobotanical Analysis of the Syrian Desert, *Palestine Journ. of Botany*, Jerusalem Ser., Vol. 2, 1940, pp. 46-96.

7:Lewis S-5 (ca. 1940–45) 1948 MDI Syria MDI

244 except wheat and barley, and around each village is an area of irrigated land on which vegetables, fruit, cotton, maize, fodder, and grain are grown. The configuration of the ground and the peculiar properties of the sand make possible the use of subsurface water for irrigation, and past and present inhabitants have taken full advantage of these conditions.

3/2 [406 179] Water is distributed to irrigation ditches from wells, surface watercourses, or *foggaras* (foggaras).[2] It is lifted from wells either by pumps or by chains of buckets geared to an animal-turned wheel. From wadis which have water in part of their course for some or all of the growing season it is taken by a gravity canal. The stream is roughly dammed and the water led, at a gentler angle than that of the watercourse, along the valley side until it reaches a suitable level for watering the ground below. Neither of these methods is of great importance as compared with foggaras, which supply most of the irrigated lands of the area.

A foggara, known elsewhere as *qanat*, *kariz*, or "chain of wells," is an underground conduit. The method has been used since ancient times in many parts of the Middle East. Foggaras are found in several regions of Syria and are especially numerous in the Selemiya region. Figure 4 shows the general principle by which the water-bearing layer is tapped by the gallery or subsurface canal. The most copious supplies of water are provided when the canal is driven back from a spring along the underground "stream" that feeds it. A depression that is a natural gathering ground of water is often utilized, or a wide area may be tapped by the construction of several converging galleries, as in Moufoggar. The gradient of the gallery is sufficient to induce water flow, but it is less steep than the general slope of the ground, so that water is conducted gradually to the surface, usually to low-lying flat land suitable for irrigation. The vertical shafts, like large wells, which connect the underground canal to the surface, were used during the digging as passages of ingress and egress and serve the same purpose now when the canals are cleaned of mud, debris, and vegetation; hence they are always surrounded with mounds of accumulated spoil. Lower down, as the canal comes to the surface, it flows between steep banks, which gradually become less high, until the water is flowing at ground level. Often the hardpan forms a natural roof to the gallery.

In length, depth, and water flow the foggaras differ greatly. One canal

---

113 [2] Foggaras in North Africa have been described and illustrated in the Geographical Review. See John Blache: Modes of Life in the Moroccan Countryside, Vol. 11, 1921, pp. 477–502, references on pp. 480 and 491; R. H. Forbes: The Timimoun Company, Vol. 33, 1943, pp. 197–213, reference on p. 199.—Edit. Note.

7:Lewis S-5 (ca. 1940-45) 1948 MD1 Syria MD1

175 Tamerlane's invasion and were dispersed in other parts of Syria. Of 3200
villages once on the tax rolls of the pashalik of Aleppo, only 400 were said
to be inhabited when Volney visited the country in the 1780's.[10] Such
peasants as remained in the west of our region suffered from misgovernment,
extortion, and raiding by Arab tribes.

166 In the second half of the past century a movement of recolonization
[231] started that is still in progress. Sheep-raising Arab tribes began to settle in
361 villages; peasants came from the districts of Hama and Homs; immigrant
795 Circassians established four villages north of the town of Selemiya. The
312 frontier began to move outward once more, and old foggaras were cleaned
241 and repaired to give irrigation water once again. The strongest and most
● energetic immigrant group, the pioneers, were Ismaili, led back to their
land of a thousand years ago by a group of powerful leaders. They settled
first on the site of Selemiya itself about 1870. Today they number 14,000 or
more, the majority living in the town and in villages to the east. They chose
village sites where old foggaras could be brought into use, and for 75 years
they have been extending the area of irrigated land by the restoration of old
canals and the digging of new ones. In the last 20 years subsistence agriculture,
depending largely on unirrigated grain farming, has given way
before a more intensive commercial system, typified by the growing of
irrigated cash crops such as seed onions and cotton on individualized holdings.
[657] The government has granted money for canal cleaning and swamp
drainage. All these factors have contributed to extension of irrigation.

312 Some old canals, however, are still derelict. Some are so ruined that the
[464] cost of repair would be prohibitive. Others may yet be brought back into
use, but the will to work is weaker than in the early days of colonization,
and now laborers' wages and other expenses have increased. Elsewhere
village boundaries cut across old canals. Landowners of the village where a
canal rises are loath to let the water flow away to the lands of another village,
and thus ancient foggara systems which were perfectly related to the physical
environment have been partly replaced by more local schemes of surface
canal and ditch irrigation. For example, the canals that rise in Moufaqqar
(Fig. 3) could irrigate land and drive mills in Moufaqqar, Tell et Tout, and
Selemiya, but they have been so modified that the water is used only in
Moufaqqar, and some of it runs to waste. A canal which rises in Tell et
Tout but which formerly flowed on to Selemiya land has been blocked,
so that its water irrigates Tell et Tout land only.

---

113 [10] C.-F. Volney: Travels through Egypt and Syria, in the Years 1783, 1784 & 1785, translated from the French, 2 vols., New York, 1798; reference in Vol. 2, pp. 90-91.

132 region to another. On some mountain heights it is over
40 in., while in the desert areas it sinks almost to nothing.
The temperature also varies greatly, in general increasing
from west to east and to a lesser extent from north to
132 south. The differences of rainfall and temperature, together
311 with such other factors as the presence or absence of rivers
241 and springs, give rise to great differences in fertility and
vegetation. The coastal regions have a Mediterranean climate, and are often well watered both by rainfall and by rivers; they are suitable for cereals, tobacco and many kinds of fruit. The seaward slopes of the maritime ranges have a more temperate climate, and terraces of cultivable soil on which olive trees and vines can grow; but the eastern slopes are more barren. The central depression has a sub-tropical climate. Parts of it are well watered by rivers and are fertile. In the Jordan Valley, fruits can be cultivated, and cereals in the more northern parts of the inner depression. Much of the inner range is dry and barren; but on the plateaux of the north and of Transjordan there is sufficient rainfall to make possible the cultivation of cereals. This is true also of the Hauran and Jebel Druze. The Ghutah is suitable with irrigation for the growing of fruits of many kinds. East of the inner range the rainfall becomes scantier, the heat more intense, and the land less fertile; until finally it becomes too arid to be suitable for anything but pasturage. But across the Euphrates conditions change once more, and it is possible to grow cereals in the river valleys of the Jazirah.

3

131 The nature of Syrian history has been deeply affected by the structure and position of the land. It is largely a history of economic, political and other movements affecting the whole area of which Syria forms a part. To those movements Syria has served at times as a starting-point, at others as a terminus or a bridge.

439 The first of the movements has been that of world trade. Syria has almost always been an important link in the trade-routes which connect the Mediterranean world with India and the Far East; and its own products, oil, grain, textiles and metal work, have at times found a market in the Western world. Another and more specialized trade has been that with

the tribe or collection of clans, held together by blood-relationship and regulated by customary law dispensed by chieftains who owed their position to a combination of birth and ability. 538

Arab life and society were reflected in the literature of the Arabic tongue: a literature which at least in its early phases grew up in isolation, developing its own norms and methods. 181 Later it was influenced by other literatures, but throughout its history it preserved a continuity of outlook and subject-matter and perfectly expressed the dreams, the convictions and the limitations of the people which produced it.

7

The Arabian influences were brought into Syria by the 177
successive waves of Beduin immigrants from Arabia; a few 186
generations after the Islamic conquest they had permeated virtually the whole population, whether or not they were Arabian by origin. The popular morality, the folk-lore and the language of the people became Arabic, and the literate took pride in Arabic poetry and prose. Tribalism and loyalty to the clan or patriarchal family continued to be the bases of society even in conditions very different from those which had generated them. The depth of Arabization varies however from one part of the country to another. In certain sections of the coastal mountain-ranges Arab ways took longer to penetrate and perhaps went less deep than in the plains of the interior.

The only important elements in the population which 177
were not Arabized were the Kurdish and Turcoman tribes 568
which at a later period had established themselves in the 184
northern portions of the country, and some of which from being nomads had become semi-sedentary or sedentary. They however were not wholly isolated from the majority, since they were orthodox Moslems and possessed a tribal organization similar to that of the Arabs. There were also Armenians, Turks and Europeans in the larger towns.

8

The Arab tradition was modified by the new economic 621
conditions which the tribes found when they reached the 241.
Fertile Crescent. Those tribes which remained on the edge of the Crescent continued their pastoral life; but those which

621 penetrated more deeply into the settled land gradually changed
241 from nomadic pasturage to sedentary agriculture. They grew wheat and other cereals wastefully and by primitive methods which had not changed for many generations; sometimes using the remnants of the Roman irrigation system, but more often relying upon the rain and the sparse streams; producing mainly for subsistence, but selling what surplus they had in the towns. After the early Islamic period there was an uninterrupted decline in the agricultural productivity of the country. Its causes were mainly political: the exactions of tax-collectors and the depredations of civil war.

619 The constant immigration of new Beduin tribes prevented
721 the maintenance of a stable agricultural life in all except
221 the coastal regions. The Beduin always looked upon the settled land as a source of plunder, and gave no willing allegiance to any Government, or to any law except their own customary codes. Periodically the peasants' work was set back by the incursions of the nomads, and the constant threat of raids served as a discouragement from enterprise. The margin of cultivation was in consequence always shifting and uncertain; it moved eastwards into the desert when the Government was strong enough to hold back the Beduin or induce them to settle on the land, and when the Government was weak the opposite process took place.

621 In consequence of the change to agriculture, the relationship
427 between tribesman and tribal chief was replaced by, or rather
651 transformed into, that of peasant and landowner. Syria was
423 a feudal country. Until the seventeenth century the lords had held their lands on condition of performing military service; but later the feudal army fell into disuse, and a new feudalism grew up based upon tax-farming. The Pasha of the province was normally the chief tax-farmer; he was required to transmit an annual tribute to Constantinople, and in return was allowed to squeeze as much as he could out of his subjects. Beneath him there was a hierarchy of feudatories, farming their districts or villages on similar terms. In some districts they were Ottoman officials, but in others the right of collecting taxes was given to the local or tribal chiefs, who were virtually autonomous. This was especially so in mountainous districts like Lebanon, Jebel Druze and the Alawi district.

621
423 The feudatory's tenure was precarious, and his power

000 162 eastwards into the desert. At present the bulk of the population is concentrated in a comparatively small part of the total area of the country; it is mainly in the West and in the river valleys of the Jazirah. The density of population is greatest on the coast and round Damascus and Aleppo.

241 The crops which are grown or could be grown vary greatly from district to district, in accordance with variations in climate and the soil's fertility. The Jazirah, the great plain of Homs and Hama, the Biqa' and the Hauran produce wheat, and to a lesser extent maize, barley and other cereals. Olives, vines and other fruits are grown on the coastal plains and the westward slopes of the coastal ranges; tobacco in Lebanon and around Latakia; cotton also around Latakia, and in the Biqa'. Some districts are well watered by springs, summer streams and perennial rivers, and some, in the north more than in the south and on the coast rather than inland, enjoy an adequate rainfall; but the fertility of almost all parts of the country could be much increased were its water-resources to be properly exploited. The Orontes in the north, the Litani in the south, the Euphrates and its tributaries in the north-east and other rivers could be used to irrigate perhaps half a million more hectares than are irrigated to-day. The rainfall could be more fully utilized, and the agricultural situation improved in various other ways, by systematic reafforestation, to make up for the bad effects of neglect in the past. Under French rule a little has been done to this end, but more remains to be done.

135 The mineral resources of Syria and Lebanon have not yet been thoroughly investigated but are probably not extensive. Salt and some other minerals exist in quantities sufficient to supply the country's own needs; but iron and other requisites of industry are found only in small quantities or else not at all. In recent years there have been reports of the discovery of oil in the Jazirah, but whatever oilfields exist are not yet being exploited.

433 241 In normal years the country's production of food equals and often exceeds its consumption, although the inadequacy of internal communications and other factors make necessary a certain importation of agricultural products from the neighbouring countries. Improvements in the quality of seeds and livestock and the modernization of agricultural methods have already begun, and greatly help in increasing production.

11: Hourani S-4 (no date) 1946 MD1 Syria MD1

production. A reform in the system of land-tenure would 000
also help. In some parts of Lebanon small free-holdings are 423
to be found, but in Syria large estates are the rule, and
'métayage' is perhaps the most common form of tenancy.
The 'musha'' system of communal ownership, under which
holdings are periodically re-distributed, is also widespread.
In the past twenty years the Mandatory authorities have made
progress with land-survey and the settlement of title, and
with the division of lands held under the 'musha'' system
But greater tasks remain. Large tracts of the country are 433
still in the possession of a small number of landowners, who 185
for the most part are not interested in improving either the 241
productivity of their lands or the standard of living of the
workers. The creation of a free peasantry, by the breakup
of the large estates and the appropriate use of the vast
state-domains, is still in the future. The facilities for agricultural
credit are very inadequate; there are practically
no co-operatives and very few agricultural banks, and in
consequence the peasant is in the clutches of the moneylender.
The tax-system is regressive and weighs heavily upon
the cultivator.

A special problem is created by the Beduin, of whom 619
there are over half a million. Their economic function is 233
the breeding of camels in the steppes and desert regions where 221
agriculture is impossible. They are divided into tribes of 167
which the most important are the various Anazah tribes—
the Ruwala, the Feddan, and the Sba—in the steppe and
desert south and west of the Euphrates, and the Shammar in
the Jazirah. Traditionally contemptuous of the settled
population and of all government, in the past they have been
a serious obstacle to agriculture; but during the last two
generations or so the Government has made a serious attempt
to control their wanderings, and to prevent their raiding each
other and the settled regions, while allowing them to preserve
their tribal law and organization. At the same time their
economic position is being undermined by the decline in the
demand for camels. This makes it the easier to induce them
to settle on the land. In the Jazirah, in the Hauran and 221
elsewhere tribes can be found which are abandoning the 621
wandering life. They take to breeding sheep as well as camels 231
and become semi-sedentary; then they begin to cultivate the 619
land and in time become wholly sedentary, thus continuing

14:International Bank S-5 (1954) 1955 MDI Syria MDI

311 rainfall is supplemented by the water brought down from the mountains
133 by its rivers. The principal of these is the Euphrates which has its headwaters in Turkey and flows in a generally southeasterly direction across Syria into Iraq. Together with its most important tributary, the Khabour, which also rises in Turkey, it accounts for 90% of the total annual flow of all Syrian rivers. In the west the largest river is the Orontes which is fed by springs from the Lebanon and Anti-Lebanon ranges and flows northward through the marshy area known as the Ghab into Turkey. Farther south the Barada river, rising in the Anti-Lebanon, supplies life-giving water to the fertile Ghouta oasis around Damascus. In the extreme south the Yarmuk river flows along the Jordanian frontier into the Jordan river. Although the flow of these rivers is highly seasonal, it is on the effective utilization of their waters that much of the future development of Syria's agriculture depends.

Principal Regions

631 Administratively Syria is divided into nine *mohafazats* or provinces, each in charge of a *mohafez* or governor; the province is in turn divided into *qadas* or counties headed by a *kaimakam;* and the county is further subdivided into *nahiyes* or townships in charge of a *mudir*.

● 241 Of greater significance, however, are the principal economic regions.
438 Farthest south are the adjoining regions of the Hauran and Djebel Druze.
311 The Hauran plain, an area of rather high but apparently declining fertility, has long been known as a granary, even in Roman times. Its principal crop is wheat, but barley, maize, sorghum and pulses are also important. To the east rises the Djebel Druze, a basaltic dome, where the Druzes, a proud and independent people, eke a bare living from the pockets of fertile soil in their mountains. Here the pressure of population on the land is acute. Agricultural holdings in the Hauran and Djebel Druze are predominantly small. There is little irrigation, and annual rainfall, averaging less than 12 inches, is barely adequate for dry farming. Sharp fluctuations in rainfall frequently make farming precarious. One of the principal problems of this region is the scant supply of underground water even for drinking.

To the northwest of the Hauran lies the higher, rolling Julani plateau stretching toward the Hermon range. This stony region is suitable only for grazing and, to some extent, for orchards. To the north a narrow band

241
438
311

of cultivation leads to Damascus where semi-desert conditions prevail and rainfall is generally inadequate for dry farming. Thanks to the waters of the Barada river, however, Damascus lies in a fertile oasis, known as the Ghouta. It is pre-eminently an area of orchards and vineyards yielding olives, fruit and nuts. Vegetables, hemp and, more recently, sugar beets are also important crops and extensive dairying is carried on. Damascus, linked with the nearby Lebanese port of Beirut by road and narrow-gauge rail, is one of Syria's two leading industrial centers, the other being Aleppo. Aside from the textile factories which constitute the principal industry, Damascus has plants for the production of cement, glass, vegetable oils, soap, leather and boots and the canning of foodstuffs.

North-northeast of Damascus up to the plains of Homs the country is for the most part rugged and barren, with occasional oases. From Homs to Aleppo stretches an extensive plain which is, along with the Jezireh, the most important agricultural area in Syria. Rainfall is fairly adequate, ranging from an annual average of around 600 mm. (23.6 inches) at Homs to a little less than 400 mm. (15.7 inches) at Hama and Aleppo. The region is the site of the largest completed government irrigation scheme, the Homs-Hama irrigation network, fed from Homs lake; extensive areas are also irrigated by wells, river pumps and water wheels. Northwest of Hama lies the large marshy area known as the Ghab into which the Orontes river pours its water and which the government is just beginning to reclaim. The Homs-Hama-Aleppo area has become the center of cotton and sugar beet cultivation, and it produces roughly one-third of the country's wheat and almost one-half of its barley. West of Aleppo extensive orchards and vineyards produce olives, fruits and nuts. The landholdings of the area are generally large and for the most part cultivated by sharecroppers, who earn a bare living. Around Aleppo mechanized agriculture is developing on some scale.

Aleppo, the principal grain market and commercial center of the country, has also developed considerable industry, featuring cotton ginning and textiles, vegetable oil extraction and soap making, and cement. Homs, with its new sugar factory, a modern textile dyeing plant, several flour mills and a large number of small weaving enterprises, has also achieved some industrial importance.

West of Homs and Hama lies the province of Latakia, facing the Mediterranean. It receives the highest rainfall—up to 1,000 mm. per year—and has a subtropical climate. Its rather narrow coastal plain boasts a diversified agriculture yielding tobacco, cotton, legumes, melons, olives and some citrus as well as winter cereals. Its principal city, Latakia, is a rapidly growing port serving as an outlet for the large agricultural output of northern Syria. The coastal plains and the mountains of the province are the country's most densely populated areas.

East of Aleppo lie two distinct agricultural regions, one the belt of rain-fed cultivation stretching along the Turkish frontier and comprising principally the province of the Jezireh, the other, the irrigated Euphrates valley. The Euphrates flows in a southeasterly direction through an arid region but the water taken from the river by hundreds of pumps makes possible extensive cultivation of cereals in the winter and cotton and other crops in the summer. Cultivation is principally by sharecroppers. Deir ez Zor is the largest city in the Euphrates valley. The Jezireh in northeastern Syria has now become the country's principal granary. Once the home of roaming, warlike Bedouins, it was pacified and thrown open to settled agriculture only during the last two decades. Beginning in the second World War, cultivation was rapidly expanded until now the Jezireh produces almost half the country's wheat and a considerable amount of barley as well. Dry farming predominates, with cultivation extending from Hassetche, the capital of the province, where rainfall is marginal, northward to the Turkish border where rainfall is heavy and the region's principal commercial center, the bustling town of Kamichliye, is located. In the valleys of the Khabour and Jagh-Jagh rivers, however, there is some irrigated cultivation, with cotton and rice as the principal crops. In this sparsely settled region, dry farming is carried on in large holdings —in some cases more than 100,000 hectares—and with fleets of tractors and self-propelled combines. The principal problem of the region is transport, for it is served inadequately by a railway running in and out of Turkish territory and by roads and tracks which are impassable for part of the year.

South and southwest of the Euphrates and extending toward Hama, Homs and Damascus lies a large, roughly triangular area, the Syrian desert. This desert or steppe area, although dotted here and there by an oasis, is too arid to support cultivation. Vegetation springs up briefly following the scant winter rains and supports during this time large flocks of sheep and goats tended by Bedouin tribesmen who are also engaged in the breeding of camels. Inadequate water supplies and occasionally severe weather make serious inroads on the flocks from time to time.

Natural Resources

Land and water are undoubtedly the principal natural resources of 135
Syria. Indications do not point to extensive mineral deposits. Some poor 315
lignite but no coal has been found. A subsidiary of the Iraq Petroleum 316
Company carried out extensive prospecting and drilling over a considerable area under a concession granted in 1938. After spending about £ 6 million sterling in exploratory work, it surrendered its concession in August 1951. Although the belief persists in Syria that considerable oil will one day be discovered, there is no evidence to support the supposition. Drilling did reveal the presence of natural gas in eastern Syria, southwest of Hassetche, and also of appreciable quantities of rock salt. In theory this gas, if proved in considerable volume, together with salt, could provide the raw materials for the production of fertilizers and alkalis, but other countries—for example Iraq—may well be more favorably situated with respect to the development of similar resources. The natural gas could also be used as a source of energy but it is unfortunately found at a considerable distance from the potential market in western Syria.

There are important deposits of bitumen or asphalt. One of these, in the province of Latakia, is already being mined, but other and far richer deposits uncovered in the Djebel Bichri, west of Deir ez Zor, are being exploited to a minor extent only by the Ministry of Public Works. The latter deposits are expected to assume considerable importance in the extensive roadbuilding program the government is planning to undertake. Iron ore, chromite and lead and iron pyrites are known to exist, but their presence in commercial quantities is still to be proved. While licenses for prospecting of minerals are being issued, on the basis of existing evidence it seems unlikely that mineral resources exist in sufficient quantities to affect the future of Syria significantly.

Agriculture

Syria is predominantly an agricultural country. Between 65% to 75% 241
of the people derive their living directly from agriculture, and a [262]
considerable portion of the balance earn their livelihood by handling or 433
processing agricultural commodities. Agriculture and animal husbandry together probably account for 45% to 50% of the national income. In agriculture, winter crops are most important because rainfall is concen-

241
433 trated in the fall and winter seasons. Thus around 70% of the area in crops is usually planted to wheat and barley, and these two cereals contributed £S 59.2 million and £S 70.8 million or approximately 19% of the total value of Syria's exports in 1952 and 1953. Although a considerable number of summer crops are grown, including sorghum, maize, rice, pulses and vegetables, by far the most important of these is cotton. The latter now rivals wheat as the most valuable crop of the country even though the 1953 acreage planted to cotton was only 10% of that sown to
[439] wheat. Exports of cotton and cotton seed amounted in 1952 and 1953 to £S 131.2 million and £S 140.2 million, or 38% and 40% of the value of all exports. Orchard crops such as olives, nuts, apricots and other fruits also assume some importance in agricultural production, although they
233
439 take up less than 10% of the planted area. Animal husbandry, based principally on sheep and goats, is primarily a pastoral industry without a close link with settled agriculture. Exports of livestock and livestock products including hides and skins, samneh (clarified butter), cheese and eggs, amounted in 1953 to almost £S 48 million or around 13% of the total value of exports. Live animals alone contributed £S 23 million, although such exports were offset by imports, primarily from Iraq, to a value of £S 7.1 million.

241
433 Much of Syria's agricultural output is consumed on the farm and therefore does not enter the market economy. From the returns of the agricultural production tax, which is levied only on produce brought to market, it may be estimated that only around 40% of the production of wheat, maize and sorghum and less than 30% of the output of lentils is sold.

Industry

433
464 During the postwar period industry has steadily forged ahead, although its contribution to national income is probably still only between one-fifth and one-fourth that of agriculture and animal husbandry. The number employed in manufacturing is difficult to estimate, since the 1947 census provided no occupational breakdown, and industrial enterprises required to register with the government generally understate the number of workers employed. Fragmentary data collected by the mission indicate that employment in more or less mechanized manufacturing establishments, many of which are very small, may be between 35,000 and 40,000. If

454 Savings institutions are virtually non-existent. There are no special savings banks and the regular commercial banks do not consider it worth while to make a particular effort to attract savings deposits. In fact, total savings deposits in commercial banks at the end of 1953 amounted to only £S 3.5 million. No postal savings system exists, and savings in the form of insurance are negligible. This does not mean that savings do not accrue, but rather that they do not take institutional form and are invested directly, not through the intermediary of institutions or a capital market. Syrians generally prefer types of investments which are tangible and visible, such as land and buildings, and over which they can exercise some personal control. In the past the habit of putting savings into hoards of precious metals or even currency has also been deeply ingrained. There is some evidence, incapable of statistical measurement, that the relative importance of savings in the form of hoards has declined in the postwar period as opportunities for profitable investment have grown. Investment in corporate securities has greatly increased during this period, but only by limited groups of people and under conditions assuring them control over the corporate enterprise. Shares in industrial companies are bought and sold in an unorganized and very limited market.

Economic Growth

241
311
483 One of the most noteworthy features of the Syrian economy has been its rapid growth over the last two decades, as indicated in Table 3. Agriculture and industry have both featured prominently in this development. The availability of idle land combined with the food shortages attributable to the war provided a tremendous incentive to an expansion of agricultural output. The area under cultivation, including fallow land, rose from about 1.75 million hectares in 1938 to 2.3 million in 1945 and has since continued to expand, reaching a total of around 3.65 million in 1953. The area actually planted to crops and orchards accordingly more than doubled during this entire period, rising from 1.16 million hectares to 2.44 million. By far the greatest part of the area put to the plow was dry farming land. According to official estimates, for example, the amount of land planted to winter wheat and barley increased from about 750,000 hectares in 1938 to 1.13 million in 1945 and 1.34 million in 1953, and the output of these cereals about doubled during the whole period. Following the war a considerable expansion of irrigation took place. By 1953 the irrigated area

was officially estimated at 509,000 hectares as compared with 284,000 in 241
1946. The resulting rise in the value of agricultural production was par- 311
ticularly marked, since with irrigation more valuable summer crops could 435

TABLE 3 Indicators of Economic Growth

241
433
434

	Prewar	1945	1947	1950	1953
Agriculture					
Cultivated area (million ha.)	1.76	2.29	—	3.09	3.67
Cropped area (million ha.)	1.16	1.51	—	2.05	2.44
Wheat					
Area (thousand ha.)	473[a]	751	843	992	1,314
Output (thousand MT)	459[a]	415	404	861[b]	962[b]
Barley					
Area (thousand ha.)	279[a]	384	365	416	428
Output (thousand MT)	290[a]	248	169	322	472
Cotton					
Area (thousand ha.)	30[a]	17.5	19.3	78.0	136.6
Output (thousand MT, ginned)	5.4[a]	4.3	5.4	35.5	47.0
Agricultural production tax (million £S)[c]	—	—	9.1	16.2	22.4
Industry—Output					
Cotton and rayon yarn (thousand MT)	1	—	—	—	9–10
Cotton and rayon cloth (million meters)	15	—	—	—	ca.100
Vegetable oils, excluding olive (thousand MT)	(negligible)	—	—	—	ca.10,000
Soap (thousand MT)	3.4	—	—	—	8.9
Fruit and vegetable preserves (thousand MT)	1.8	—	—	—	4
Cement (thousand MT)	less than 75	—	—	—	224
Matches (million boxes)	11	—	—	—	32.2
Cigarettes (MT)	416	—	—	—	1,644
Electricity (million KWH; principal utilities)	25.1	—	—	—	114.2
Financial					
Government receipts (million £S)[d]	11.5	118.3	116.2	138.9	216.7
Notes and coins in circulation (million £S)[d]	19.9	210.7	183.2	224.6	288.4
National income (million £S)	—	—	—	1,380	1,600

---

[a] 1934–38 average. The production figures for wheat and barley may well be somewhat overestimated.

[b] Official production figures have been revised upward in the light of the amounts marketed as revealed by the agricultural production tax returns.

[c] The proceeds of this tax, levied on produce brought to market, tend to exaggerate the rate of increase in production, but are nonetheless a good indication of trends in output.

[d] Figures are not deflated for price increases. While a reliable price index is lacking, the price level in the period 1950–53 was probably between five and seven times as high as that before the war.

241 311 433 be grown. Thus with the stimulus originally imparted by the Korean war boom, cotton, which had long been grown in Syria but on a small scale, has developed into one of the country's most valuable crops.

433 Manufacturing has expanded rapidly in the postwar period. Although the original impulse was given by the wartime shortage of manufactured goods, new factories were not for the most part established until after the war. Among the new modern factories built since then are six spinning and weaving mills, a considerable number of cotton ginneries, a dyeing plant, six vegetable oil mills, a glass factory, a cement plant and a sugar factory. The total amount of paid-up capital of manufacturing enterprises established in corporate form since the end of the war is in the neighborhood of £S 80 million. Since enterprises generally refuse to disclose their output, statistical measurement of the increase in production is extremely difficult. Very rough estimates indicate that about 9,000-10,000 metric tons of cotton and rayon yarn were produced in 1953 as compared with probably less than 1,000 tons in prewar years. The output of cloth was about 14,000 to 16,000 tons, or more than 100 million meters, as compared with perhaps 15 million meters before the war. The production of vegetable oils (other than olive oil), which was negligible before the war, amounted to around 10,000 tons, and the output of soap, at a level of about 9,000 tons, was almost three times the prewar estimate. Cement production, which was less than 75,000 tons before the war, amounted to 223,639 tons in 1953. The output of cigarettes was about four times, and that of matches three times, that of prewar years.

331 The expansion of agriculture and industry has in turn stimulated commerce, transport and construction. The construction industry in particular has witnessed a postwar boom which lifted the volume of building to a level probably twice as high as that in the years immediately preceding the war. Increasing prosperity, together with the wartime drop in building, generated a large volume of housing construction in all major cities.

494 The increase in national income since before the war has undoubtedly been very great; in real terms it may well be almost double. Unfortunately the fragmentary nature and unreliability of statistical data make even approximate estimates of national income extremely difficult. For the postwar years an unofficial estimate has been made only for 1950, when national income was put at £S 1,250 million. Some very tentative calculations made by the mission indicate that this estimate may well be too conservative. These calculations point to a rise in national income from

654 severely diminished, and agricultural prices no longer afford such a power-
433 ful stimulus to the expansion of acreage. Extension of the irrigated area
311 must depend increasingly on public investment, particularly since the area which can be economically irrigated by privately installed pumps cannot be greatly expanded.

654 High transport costs and the low quality of grain are becoming serious
433 handicaps to Syria in an increasingly competitive world grain market. In other sectors economic activity seems also to be slackening. The future growth of industry is likely to be less rapid now that the more obvious manufacturing industries have been established. In construction it is also quite possible that the postwar boom has passed or will shortly pass its peak. Thus in the absence of a well-considered government program to stimulate the economy, the rapid increase in production and private investment may well taper off.

654 In agriculture the government now faces the need to make a careful
241 inventory of remaining land resources, to carry out irrigation projects on a greatly increased scale and to initiate settlement schemes for state lands. Steps must be taken to maintain and stimulate Syria's grain exports by providing better and cheaper transport and establishing facilities for the storage, grading and cleaning of cereals, thereby reducing losses and improving quality. In the future more emphasis will need to be placed on raising agricultural and livestock yields. The government will have to stimulate farmers to use better seeds and implements and to improve their crop rotation in the direction of soil-building crops and greater diversification. Livestock yields must be raised by undertaking a program of selection and cross-breeding, by building livestock shelters and providing more water for migrating livestock, and by initiating a more effective campaign against pests and diseases. To achieve these objectives the government must also expand and improve agricultural education, make available extension services at the village level and furnish much more agricultural credit on reasonable terms. Special efforts are required to assist the small peasant proprietor and the tenant who have not in the past fully shared in the rising prosperity. They must be helped to achieve greater economic independence and security and enabled to acquire the means of production with which to increase their incomes.

654 Although further expansion in industry should prove possible, greater
433 emphasis will have to be placed on selective expansion and on increasing efficiency so as to lower prices and broaden the market. Here the govern-

CHAPTER 3

AGRICULTURE AND ANIMAL HUSBANDRY

1 CHARACTERISTIC FEATURES AND PROBLEMS

A development program for Syria must focus primarily on agriculture. 241 Despite the expansion of manufacturing, agriculture will continue to be the country's principal industry. Its potentialities are still large. It not only employs more people than any other occupation, but furnishes most of the raw materials for manufacturing and gives rise to most of the business in commerce.

The mission has drawn up its recommendations in the light of the characteristics of Syrian agriculture and the principal problems which must be met. Its conception of these characteristics and problems, as outlined below, must therefore be clearly understood.

1. *Syrian agriculture is primarily dependent on rainfall which is seasonal, varies considerably from year to year and is frequently scanty.* 241 311

Irrigated land accounts for only 11-12% of perhaps 3.5 million hectares under cultivation. Since there is no rain during the summer, winter crops predominate. Wheat and barley are therefore the principal crops; and the possibilities of diversification are limited. In most of the cultivated area normal rainfall is barely adequate. Periodic droughts such as the one in 1951 tend to make farm income very unstable.

All this points to the need for expanding the area under irrigation as much as possible. The proper conservation and use of the limited water resources is one of the paramount problems of Syrian agriculture. The extension of irrigation in the past has already made possible the introduction of such new crops as cotton and sugar beets which have added substantially to agricultural income.

2. *The great increase in the area under cultivation over the last few decades severely limits the possibility of further expansion without irrigation.*

In the past there was plenty of good idle land available for farming. The rapid extension of cultivation was greatly facilitated by the fact that

241 311 people could claim title to "empty" land by simply occupying and cultivating it for a period of years. Legislative Decree No. 135, although never applied, was enacted to halt this unregulated expansion by making all unoccupied land state domain and thus subject to exploitation only with a prior permit. This legislation implicitly recognized that the amount of land that could still be put to the plow was steadily shrinking. Nonetheless the mission encountered a widespread impression that agricultural land resources were virtually limitless. Official estimates that there remain somewhat over 3 million hectares of land available for cultivation appear to support this impression. However, such an estimate is at best only a rough guess. It undoubtedly includes much land which is marginal from the standpoint of fertility or rainfall. It should be frankly acknowledged that there is little or no reliable information on this subject. The mission itself gained the impression on its travels that the amount of land still available for cultivation without irrigation is extremely limited. Here and there in the Jezireh, for example, cropping has already pushed forward into marginal land. Even though good yields may be obtained on such lands in seasons of abnormally heavy rainfall, farming would normally be very hazardous.

Certain conclusions must be drawn. The first is that irrigation will need to play an increasingly important role in the expansion of land under cultivation. The second is that a careful inventory and classification of the land still available should be undertaken in order to determine how it may be most effectively utilized and what must be done to make it productive. The final conclusion is that there is need to work out policies and programs for the exploitation and settlement of such good land as remains.

241 423 3. *Ownership of the means of production in agriculture is very unevenly distributed, resulting in wide disparities in income.*

Land ownership is by no means equally distributed. There are many landless peasants, while large landed estates, some exceeding several hundred thousand hectares, predominate in the provinces of Hama, Homs, Aleppo and the Jezireh. One estimate indicates that 38% of the total area of privately owned land was in holdings of over 100 hectares and only 19% in small holdings of 10 hectares and less. Reliable figures on the distribution of land ownership will be available only upon completion of the cadastral survey now in progress. Of the area surveyed by the end of 1952, however, 49% was held in properties of over 100 hectares and 16% in properties of more than 1,000 hectares. These proportions, however, are

likely to decline somewhat when the survey is completed for the Hauran 241
and Djebel Druze where small peasant ownership predominates. 423

Water for irrigation is supplied chiefly by merchants and wealthy landowners who have the means to install pumps. Similarly, the ownership and operation of modern agricultural machinery are primarily confined to large operators in the Jezireh.

Ownership of the critical factors of production carries with it the ability to demand a large share of the output. In areas where rainfall is inadequate the pump owner, who is frequently not the landowner, can exact from 45% to 60% of the crop simply for the water he supplies. Where labor is plentiful and rainfall adequate, the landowner can get up to half of the crop simply by allowing others to cultivate his land. On the other hand, in the Jezireh land is plentiful by comparison with labor and rents for only a 10-15% share of the crop. Here the owners of tractors and combines control the central factor of production and can command the lion's share of the output.

The small cultivators have no capital or access to capital that would enable them to acquire more land, better machinery and livestock, pumps and other means of production by which to raise their standard of living and make themselves independent. Nor are they organized in cooperatives [424]
to undertake these things collectively. Even the larger farmer frequently has great difficulty in getting necessary capital on reasonable terms.

One of the most important objectives of an agricultural program is therefore to provide an adequate volume of credit on equitable terms in order to make the needed means of production more generally accessible. The organization of cooperatives to facilitate group action among small farmers should be another aim. No single peasant, for example, has enough resources to sink a well or install a pump, but a group of peasants could pool their resources to this end. Finally, it would appear vital to conserve the good land remaining in state domain for the purpose of settling landless peasants and Bedouins and thus gradually increasing proprietorship.

4. *Despite the existence of many large properties, land is predominantly* 241
tilled in small holdings by tenants or peasant-owners who earn a rather 423
precarious livelihood. 427

Large-scale exploitation prevails only in the Jezireh and to some extent in Aleppo where land is farmed in big units with mechanized equipment and paid labor. Even the large estates are for the most part farmed in small units by sharecroppers who are tenants at will, seldom cultivate the same

241 piece of land for long and thus have virtually no incentive to improve the
423 land. Many large landowners do little beyond collecting their share of the
427 crop, leaving relations with their tenants in the hands of agents. They
[452] often stake their tenants to seed, livestock or implements or tide them over with food and clothing until the harvest comes in; and in the absence of adequate credit institutions they thus serve a useful function. In most cases, however, such assistance in cash or kind is given on terms which conceal extremely high rates of interest. In other cases credit may be furnished without interest by landlords conforming strictly to the Islamic code. It must be recognized also that some and probably a growing number of large landowners take a more active interest in the management of their land and have been instrumental in introducing new crops such as cotton. Progressively minded owners of large estates, when interested in improved crop rotation and methods of production, can become the means for more rapid advancement of agriculture.

241 The small peasant-owners and sharecroppers, who carry on most of the
423 agriculture, produce primarily for their own consumption. Their output is little influenced by market prices, for they must produce to eat and with the balance they buy such simple necessities as they can. Most of them wrest a bare living from the soil and are chronically in debt to the merchant, the professional moneylender or the landlord. Unable to bring their produce to the market or to wait for better prices, they must accept the price offered to them locally for whatever they produce in excess of their own needs. They till their land with methods hallowed by time, and their equipment for the most part consists only of a pair of draft animals and a wooden, iron-tipped plow.

Any program of assistance to agriculture must obviously focus largely on these cultivators. It must show them how to improve their methods of production, provide them with better seeds, equipment and animals. Through the organization of cooperatives and the provision of adequate agricultural credit it should help to free them gradually from excessive dependence on the landlord, merchant and moneylender. It must also pay attention to tenancy problems with the objective of establishing greater security of tenure, providing more incentive to cultivators and achieving a more equitable sharing of the produce of the land.

423 5. *The uncertainty and confusion surrounding land titles is another obstacle to land improvement.*

The uncertainty surrounding land titles has been largely inherited from the Ottoman Empire. Conflicting land grants have often been made 423 in the past, and many claims to land rest upon grants of dubious validity. Titles frequently have not been perfected or entered into official registers. Even title deeds which are registered often contain conflicting or vague specifications regarding the area and the boundaries of the property. A considerable amount of land is still held in common village ownership and periodically reallocated among the villagers who accordingly have little interest in the permanent improvement of their changing allotments.

Programs to determine and delimit titles through a cadastral survey and to convert village common land into individual peasant holdings have been under way for several decades, but progress has been painfully slow.

6. *Agricultural yields are considerably below potentialities.* 241

Agricultural yields in Syria generally do not compare unfavorably with 433 those in most other countries. Cereal yields tend to be about 10-20% below the world average and substantially below those achieved in Europe, but cotton yields are well above the world average and now approximate those in the United States. The output per hectare for virtually all crops is better than that in the rest of Asia.

This general picture does not, however, justify complacency. The relatively good yields have no doubt been largely due to the fact that the frontiers of cultivation have been pushed steadily forward into new and virgin lands. Without this rapid expansion of the area under cultivation, productivity would probably have declined. The mission noted evidence of soil depletion and falling yields in certain areas which had been continuously farmed over many years.

With the diminution in the supply of available new land, Syria will in the future have to rely much more on an improvement in yields to maintain the rise in output. The potentialities unquestionably exist. Fallow is still virtually the only method employed to maintain and restore soil fertility. Thus at least a third of the arable land lies idle each year. Animal manure is almost wholly used as fuel. The use of fertilizers is still in its infancy; in 1953 only 11,171 tons were imported. The practice of green manuring is virtually unknown. Insects and diseases still take a heavy toll. Much higher yields can be obtained through better selection of seeds and varieties, improved crop rotation and better soil preparation and cultural practices.

7. *Animal husbandry is not practiced as an integral part of agriculture* 231
and is still on a low standard. 241

231 241 Mixed farming is rare. Except in limited areas adjoining the few large cities, no fodder is grown for livestock. None of the considerable volume of oil cake and meal and beet pulp produced in Syria is used for animal feed. On farms animals feed primarily on grain stubble and cereal straw. Most of the livestock is entrusted to Bedouins who take their flocks of sheep and goats into the Syrian desert or steppe for grazing after the rainy season and return them to the cultivated areas after the sparse vegetation of the desert again dries up. Insufficient water, feed and lack of shelter on these migratory routes often combine to inflict a rather high mortality rate on livestock. Inadequate nutrition also increases the susceptibility of livestock to parasites and diseases.

These conditions indicate a need to introduce fodder into the crop rotation scheme, to improve pastures and to provide shelter and wells corresponding to the carrying capacity of the desert. While better nutrition is most essential, an effective campaign against disease and improvement in livestock breeds would also make an important contribution to raising the standards of animal husbandry.

442 241 8. *The organization and methods of marketing are in many respects defective.*

High costs of transport and the weak bargaining position of the farmer depress farm prices; and the cost of distribution combined with inadequate grading and cleaning is beginning to threaten Syria's competitive position on the world cereals market. Lack of credit and high storage prices generally compel farmers to throw their products on the market immediately after harvest. The merchant who has access to credit and often finances the farmer can largely dictate prices to the cultivator who has no reserves.

A number of measures to cope with this problem are indicated. Proper cleaning and storage facilities for grain are needed to enable farmers to get better prices and assist Syria in maintaining its position in a declining cereals market. New and improved roads would help to reduce marketing costs, and the availability of more and cheaper credit would make the farmer less dependent on the merchant.

600 All these problems and indicated measures will now be discussed more fully under the following headings: irrigation and reclamation; land policies and land settlement; improvement in agricultural production; animal husbandry; agricultural credit, cooperatives, marketing and education.

137 659 313 To meet the cost of this program over the next five or six years the mission suggests that additional funds of £S 500,000 be made available to the forestry service.

Settlement of State Domain

428 166 The employment of state land for the establishment of peasant proprietors is already declared government policy. Article 22 of the 1950 constitution stipulates that "The State shall distribute among landless peasants, at a small cost to be paid by instalments, sufficient land to secure their livelihood"; and decrees issued by the Minister of Agriculture on November 1, 1952 and January 15, 1953, provide for the sale of government land in parcels of 50 or 10 hectares, depending on whether the land is irrigated.

The immediate need for settlement arises from certain localized population pressures and from the growing desire of the Bedouins to adopt agriculture. [161] Population pressures are most marked in the provinces of Latakia and Djebel Druze where, according to rough estimates, the amount of cultivated land available per person is less than 50% and a little over 60%, respectively, of the average for Syria as a whole. The reclaimed land in the Ghab and the Roudj should help in particular to relieve the overcrowding among the agricultural population of the Alaouit mountains in Latakia. According to the Ministry of the Interior, the Bedouins number about 150,000, half of whom, however, are said already to be engaged in some form of settled agriculture. Many Bedouins apparently tend to squat on unoccupied land which they cultivate more or less sporadically and often with extremely poor results. For them the availability of good land in such a province as the Jezireh is of paramount concern.

433 166 244 The mission has given special attention to the problems involved in settling reclaimed and irrigated areas and of undertaking certain experimental settlements in dry-farming regions. The government has not yet drawn up settlement plans for the Ghab and the Roudj, although this task is becoming urgent, particularly for the latter. For the settlement of the Bedouins certain initial steps have been taken. The government has set aside and divided into allotments 100,000 hectares in the Radd area of the Jezireh and is in the process of dividing another area of 50,000 hectares in the same province. Part of the first area has already been allocated to Bedouins but is being leased to large operators for three years in order to

build up a sufficient fund to finance the actual settlement. The mission did not obtain sufficient information on these plans to appraise their soundness, but suggests that they be reviewed in the light of the considerations that should, in its opinion, govern such settlements.

423
166
241

The amount of land to be allocated per farm family in any settlement must depend on the yield of the land and the capacity of the cultivator to till it. The prospective yield must be such as to enable the farmer to earn a decent living without, however, being so high as to create inequities. The size of the allotment must not exceed that which the cultivator can manage with the labor of his own family and with the equipment at his disposal. For irrigated areas the appropriate allotment would be 5-10 hectares where land is good to average. In areas adjoining urban markets where intensive cultivation of vegetables is possible, the allotment could be below 5 hectares; and in areas where the soil is rather poor, more than 10 hectares may be necessary. Settlements for Bedouins in dry-farming areas should be organized on the assumption of 50 hectares per family. The mission believes, however, that it would be unwise to allocate all this land at once, since no family could be expected to cultivate such a large parcel. The initial allocation should be about 25-30 hectares, and even of this a part might be put into improved pasture instead of being cropped. The balance might then be put into a reserve which would be used for grazing and be available for allotment to farmers who show themselves especially capable, or to new families in the settlement. Such a pattern will make it easier for the Bedouin to accomplish the transition to settled agriculture, by enabling him to carry on his customary pastoral pursuits as he crops his land.

The land would have to be tilled with draft animals and the necessary supplemental tools, but a special effort must be made to provide the settler with more adequate draft animals and better equipment than are customarily employed. While the use of mechanized equipment would in general be impracticable, the mission does recommend that one dry-farming community be organized on a mechanized basis. Such a community is suggested quite frankly as an experiment to test the possibilities of mechanical cultivation by smallholders. Ideally, the necessary tractors, implements and harvesting machinery should be owned and operated cooperatively. In the beginning, however, the settlers would hardly be prepared for such cooperative action. The mission suggests therefore that the government establish the necessary machinery unit under the direction

423 166 241 of a manager with experience in the operation and maintenance of mechanical equipment. In the first few years at least the services of this unit should be made available to cultivators at rates high enough to cover cost of amortization and operation. As and when the farmers acquire experience with machinery and develop a community spirit conducive to cooperative action, steps should be taken to transfer the equipment in whole or in part to cooperatives.

The government should utilize the opportunity afforded by such new settlements to raise the standard of agricultural practices above the average. A government agricultural worker or community leader should be assigned to each settlement. It cannot be expected, of course, that optimum farm practices will be adopted, particularly by Bedouin settlers. It is possible, however, to provide guidance and even, perhaps, to prescribe certain crop rotations. In the dry-farming communities wheat will obviously be the principal crop, but winter vetch and such legumes as lentils, chick peas and soya beans should also be part of the cropping scheme. From 5 to 10 hectares might be left fallow each year. Another 5-10 hectares of each farmer's allotment might well be put into approved pasture. Each settler should be provided with about 60 sheep which should give a return nearly equal to that derived from crops. For the irrigated areas much more intensive cultivation, with a minimum of fallow, should of course be envisaged. The emphasis should be on such summer crops as cotton, sugar beets, peanuts, maize, beans and vegetables grown in proper rotation. Here the use of fertilizers and insecticides will have to be especially encouraged. A few cattle should be kept on the basis of the fodder provided by some of the suggested crops.

423 166 241 361 Each settlement should be small enough so that the remotest farm would be no farther than an hour's walk from the village, and large enough to warrant the establishment of minimum community services such as a well, a mosque or church, a school and a community center. The first consideration is important only in determining the size of a dry-farming settlement and would point to a settlement with an area no larger than about 5,500 hectares. On such a dry-farming area 120 families, including 10 non-farming families, could be settled initially; and the total might ultimately be about double if the land first held in reserve as pasture were subsequently allocated to new families. Even a settlement of 120 families, with a total population of 600-720, could support minimum community facilities. For the irrigated areas, where land allotments would

423
166
241 ●
361

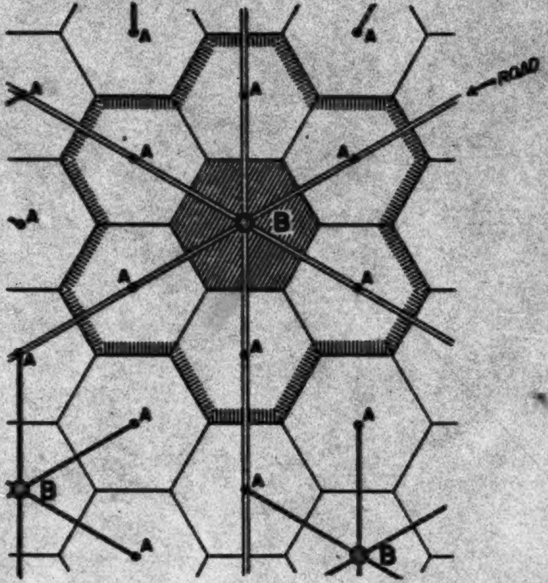

A
A
A
A
A
A
A
A
A
A
A
A
A
A
A
B
B
B
ROAD

DIAGRAM I
SCHEMATIC RELATIONSHIP OF DRY-FARMING COMMUNITIES

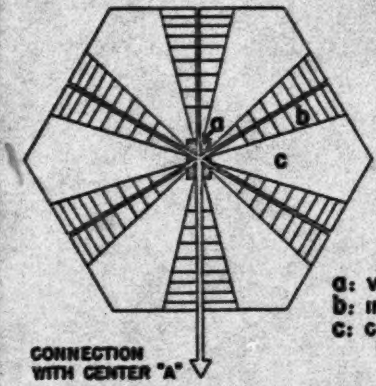

a
b
c
CONNECTION WITH CENTER "A"
a: VILLAGE
b: INDIVIDUAL FARMS
c: COMMUNITY LAND FOR GRAZING

DIAGRAM 2
LAYOUT OF COMMUNITY "B"
(20 Hectare Farms)

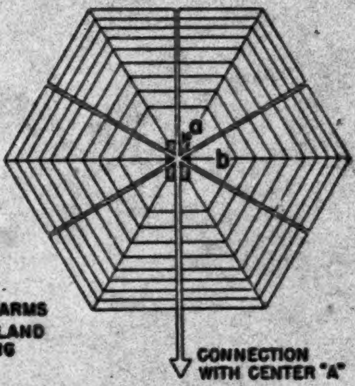

a
b
CONNECTION WITH CENTER "A"

DIAGRAM 3
LAYOUT OF COMMUNITY "B"
(50 Hectare Farms)

p. 61

423 be much smaller, the minimum size of a community might be raised to
166 around 300 families, including some 30 non-farming families. Such a larger
244 community would economize capital invested in common services. Even
361 on irrigated land, however, circumstances might dictate the establishment
of a smaller community with a provision for subsequent growth if the potentialities of the land warrant it.

A settlement should be laid out in such a way as to make access to farm land convenient and to fit into adjoining settlements of a similar type. For the dry-farming area settlement units shaped like hexagons would in principle be ideal. (See Diagrams 1-3.) In such a unit the farms could be laid out at an angle to six roads radiating from the center and parallel to the sides of the hexagon. Between the farms radiating from the roads the land initially reserved as common pasture would be located. One of the six roads would link the settlement with other communities. A number of hexagonal settlements would fit well together. It must be recognized, however, that modifications in this basic hexagonal unit will often be necessary, owing to marked variations in the quality of the soil or the topography, the relationship of the area to existing settlements and other factors. (For examples, see Diagrams 4-6.) In the irrigated regions the shape of the settlement will be largely determined by the layout of the irrigation system, so that the hexagon may well have to yield to the square as the more practical form.

In areas where a number of settlements are established the relationship of the new communities to each other and to existing settlements in adjoining areas must be carefully considered. For the Roudj, for example, the mission would suggest the establishment of about five communities, of which four would be purely agricultural and one would serve also as a minor marketing and administrative center and therefore be somewhat larger. (See Map 6.) A major center need not be envisaged in view of the proximity of the towns of Idlib and Jisr ech Chogour. For the more extensive region of the Ghab a similiar pattern can be contemplated; and the planning will need to be based on the assumption that Jisr ech Chogour, situated at the northern end of the area, will become the regional marketing and administrative center.

The mission strongly recommends the village-type of settlement. Any other type which would house the settlers on their own farms would not only be contrary to tradition, but would be destructive of community life and make it difficult to supply the needed community services. The village

423
166
● 241
361

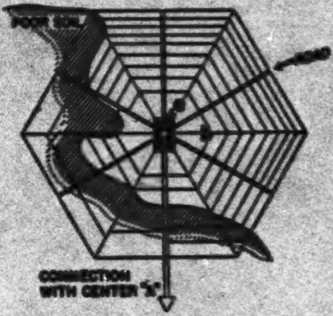

POOR SOIL
ROAD
a
b
CONNECTION WITH CENTER "A"

DIAGRAM 4
ALTERATION OF FARM DIVISIONS IN THE CASE OF VARIATIONS IN THE QUALITIES OF SOIL

a: VILLAGE
b: INDIVIDUAL FARMING
c: IRRIGATED AREA

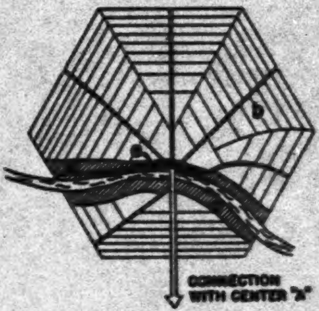

b
a
CONNECTION WITH CENTER "A"

DIAGRAM 5
LAYOUT OF COMMUNITY WITH STREAM

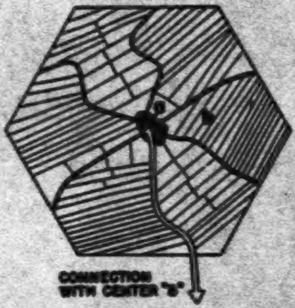
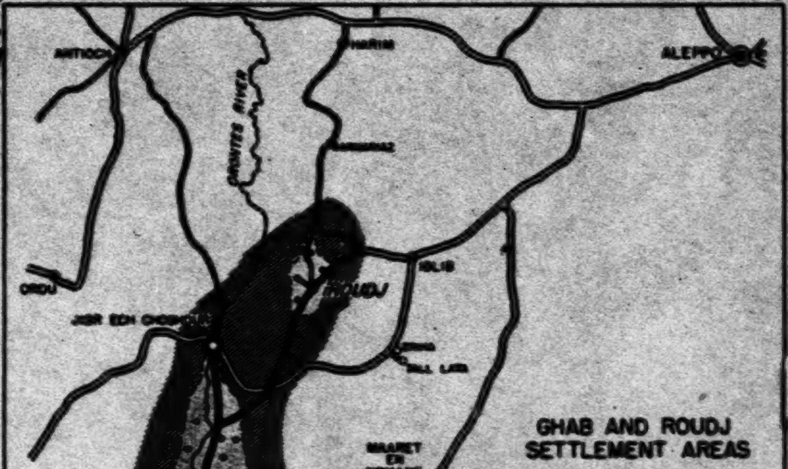

a
b
CONNECTION WITH CENTER "B"

DIAGRAM 6
LAYOUT OF COMMUNITY WITH DIFFERENT TOPOGRAPHIC CONTOURS

p. 63

133
166
● 241
361

MAP 6


ANTIOCH
HARIM
ALEPPO
ORONTES RIVER
ORDU
IDLIB
ROUDJ
JISR ECH CHOGHOUR
MAARET EN NOMANE
GHAB
HAMA
EL BELDA
SELEMIYE
GHAB AND ROUDJ SETTLEMENT AREAS
NEW LAND
AREA INFLUENCED
URBAN CENTERS
AGRICULTURAL CENTERS
VILLAGES
EXISTING ROADS
NEW ROADS
0
5
10
20 Miles

DECEMBER, 1954

p. 64

403 should be located in the center of the settlement area and laid out along a
166 rectangular pattern with the community facilities and open public places
244 in the middle. It would be desirable to have the village surrounded by a
361 small garden area and a belt of trees.

The settlement must, of course, be considered "model", but not in the sense that its standards and costs are so high as to render its general adoption prohibitively expensive. The settlers should be expected to contribute their own labor to its initial construction and the subsequent gradual expansion and improvement of its facilities. This will help to reduce costs and give the settlers a sense of pride and achievement in the establishment of the community. For example, the ultimate aim might be to provide a farm family with a 5-room house (3 main rooms, kitchen and laundry-lavatory), enclosed courtyard, storehouse and stables.[10] Initially, however, it would suffice to provide a 2-room unit without some of the elements in the final building. The cost could thus be kept to about £S 1,500, to which the settler might contribute £S 800 in the form of properly supervised self-help. Each farm family will need, however, a minimum sustenance allowance of approximately £S 1,000 to tide it over the first year when the community is in the course of construction and little is produced. Such an allowance should be paid out in the form of compensation for labor services provided by the settlers.

The mission has estimated the cash investment outlay in the different types of settlements as follows (in Syrian pounds):

	Dry farming settlement (120 families)		Irrigated area settlement (310 families)
	Non-mechanized	Mechanized	
Housing for farm families	77,000	77,000	191,100
Housing and shops for non-farm families . . .	20,000	20,000	67,000
Community facilities[a]	71,000	71,000	182,000
Draft power, livestock and implements	318,000	514,000[b]	341,250
Sustenance allowance	110,000	110,000	273,000
Total	596,000	792,000	1,054,350

[a] Including schools, mosques (or churches), community centers, water supply and roads.
[b] Including £S 250,000 for mechanized equipment.

---

[10] See Annex I, p. 468.

423 The mission suggests that the state Agricultural Bank finance the housing
166 and means of production (other than mechanized equipment) under
241 loans to be amortized over a 10-year and three- to four-year period respec-
361 tively. The government itself should be responsible for providing the funds necessary for community facilities, mechanized equipment and payment of the sustenance allowance.

423 The mission's calculations indicate that the average farm family should
166 be able to earn a net annual income of around £S 2,000 in the dry-farming
241 communities and of over £S 3,000 in the irrigated-area communities even during the period when loans are being repaid. This should leave a small margin for the payment for land in the dry-farming areas and a substantial margin for the necessary payments for land and water in the irrigated areas. The mission believes it a sound principle to require some payment even for non-irrigated state domain. The price of land, however, should be such that the settler can expect to become a full owner within a reasonable period, e.g., no more than 10 to 15 years.

Certain conditions will need to be enforced in settling peasants on the land. For example, title should not be transferred until all payments have been completed, and in the intervening period the government should reserve the right to remove settlers who prove to be clearly unsuitable or do not till their own land. Even after title has been transferred, the government might well retain for a specified period the right to veto all proposed sales, mortgages or leases, in order to safeguard the fundamental objective of establishing and maintaining independent peasant proprietors.

During the next five years the government will have to undertake the settlement of the Roudj and a portion of the Ghab. For the settlement of Bedouins the mission recommends the establishment of two experimental dry-farming communities, one of which would be mechanized, in the Jezireh. The mission must emphasize, however, that the latter two experiments are bound to fail unless the government allocates to them good land situated in a region with adequate rainfall. Both the Roudj and the Jezireh projects will provide much valuable experience useful in extending the settlement effort. In addition the government might well undertake one project in the Djebel es Smaane northwest of Aleppo and another in the Djebel Druze. The ruins of many once imposing cities testify that the first region flourished from the first to the seventh century of the Christian era, and recent evidence indicates that this prosperity was primarily founded on orchards and vineyards. More recently people have been

returning to become squatters among the ruins and cultivate patches of 423
stony but fertile soil. Organization of this rather haphazard settlement 166
and the establishment of a planned community based again on orchards 241
and vineyards may prove a worthwhile undertaking. In the Djebel Druze, where living standards are low and emigration is difficult for religious reasons, a similar settlement should be tried, provided a suitable tract of land can be found. Here, too, conditions are favorable for the establishment of orchards and vineyards.

At present responsibility for settlement is dispersed. The Ghab Ad- 423
ministration is entrusted with settlement in the Ghab; the Irrigation Serv- 166
ice has the task in other newly reclaimed and irrigated areas; and the 647
Ministry of Agriculture has the initiative for the dry-farming areas. The mission strongly recommends that responsibility for planning and coordinating all the work be vested in a single, independent Settlements Administration, which would also discharge certain governmental functions relating to housing, town planning and similar subjects. The settlement program will require a great organizational effort and a staff which only a single agency would be capable of mobilizing. One administration is also much more likely to apply the experience gained in the initial settlement work to subsequent ventures. The mission urges that such an agency be established promptly, so that the necessary planning may be immediately initiated. The assistance of a number of foreign experts will need to be enlisted to carry out the program.

If the four settlements the mission has recommended are established and the Roudj and a portion of the Ghab are settled, the total cost would probably be around £S 10 million. Under the mission's proposals, £S 5.5 million would be financed by the Agricultural Bank, and the balance met directly by the government. With these funds it should be possible to settle some 2,300 families or between 12,000 and 14,000 people.

Land Reform

While the settlement of state domain may gradually increase the num- 423
ber of peasant proprietors, Syria will also have to work out policies relat- 425
ing to land ownership and tenancy in the areas already under cultivation. In this connection it should be noted that Article 22 of the 1950 constitution calls for legislation to determine, without retroactive effect, "the maximum area of land that may be owned, exploited and disposed of, according to

477 focus not only on the farmer-owner, but also on the tenant, for only in that way can the latter's economic bargaining power be strengthened and his independence and security enhanced.

IV IMPROVEMENT OF PRODUCTION

241
483 The mission approaches a discussion of this subject with some diffidence. Generalities are difficult to avoid. It is easy to point out deficiencies in agricultural practices, but much more difficult to suggest a concrete and practicable program to improve them. Effective action is made difficult by the ignorance and inherent conservatism of farmers. It requires a larger, better trained and better organized government service to carry out the necessary trials and experiments and to work with farmers at the village level. Obviously, no miraculous increase in productivity can be expected within a short time.

Nevertheless, the subject is too important to neglect. In too many countries the undeniable difficulty of carrying out a program to raise yields has caused governments to shrink from such an undertaking. We have already indicated why much more attention must be paid to this problem in Syria. Although land in Syria is more plentiful than in many other Asiatic countries, the population pressure on good land is bound to grow. If the country is to support an increasing population on higher living standards, the task of obtaining more output from cultivated land cannot be postponed.

The mission can only point out some of the potentialities and indicate in a rather general way how they might be realized. More detailed programs must be worked out by the Ministry of Agriculture with the help of the FAO or other sources of technical assistance.

Crop Rotation and Diversification

Improvement in existing patterns of crop rotation is one of the most important methods of improving the fertility and structure of the soil and permitting a gradual diminution in the use of fallow. The aim should be to reduce customary fallow in the rainfed areas by at least 50% and to the greatest extent practicable in the irrigated areas. The much more extensive use of leguminous plants for both winter and summer cultivation would help to remedy existing deficiencies in nitrogen and supply either nutritious fodder for livestock or material for green manuring to build up the depleted humus in the soil.

At present no legumes other than winter vetch and berseem are grown on a large scale during the winter season. While lentils, beans and peas are cultivated as cash crops in the Hauran and regions around Damascus and Aleppo, the value of legumes for fodder and pasture is not appreciated. A considerable number of leguminous plants which have not been cultivated in Syria, at least on any considerable scale, might well be introduced and tested.[11]

Aside from these legumes, other crops might well be tried out for inclusion in the rotation system so as to provide more diversified production. Among these are oil seeds such as the sunflower, linseed and sesame. The mission also recommends experiments with safflower, a plant which grows well under dry climatic conditions and in soils of moderate fertility.

The mission recommends that experiments be undertaken to determine the best rotation schemes for both irrigated and non-irrigated land in different parts of the country; and it suggests that £S 1 million be made available to defray the cost over the next five or six years. A substantial part of this should be used to finance trials on selected, strategically located farms, especially to provide free seed and instruction to farmers willing and able to try changes in crop rotation which experimentation has indicated as advantageous.

We realize that the adoption of crop rotation plans designed to reduce fallow significantly will by no means be easy. There will be limitations set by the availability of manpower, draft animals and machinery, and water. Legumes, however, can often be interplanted with cereals; and ways and means can probably be found to fit new crops into the rotation scheme at a time when they will not compete with the principal crops for the cultivator's time and equipment, or, in irrigated areas, for the available water. If additional implements or draft power are needed, they may be acquired, provided better credit facilities are established. Since additional resources are no doubt required to keep more land cropped, the economics of new rotation plans will have to be carefully worked out in the course of the proposed experiments and trials.

---

[11] See Annex C, p. 309, for specific suggestions.

Fertilizers, Insecticides and Weedicides

241
433

In increasing fertility, the more extensive use of fertilizer can be an important supplement to, but never a complete substitute for, better crop rotation. The most serious deficiency in Syrian soils is nitrogen, and though phosphorous is present the alkalinity of the soil often makes it less available as a plant nutrient. The use of ammonium sulphate, or anhydrous ammonia, and superphosphates could undoubtedly raise yields significantly. At present only modest quantities of fertilizers are applied in the Ghouta and in the cotton-growing regions. It is idle, however, to expect a rapid expansion in the employment of fertilizers; and a program to encourage their promiscuous use might well do more harm than good. The response to fertilizer depends very largely on appropriate timing of its application, the availability of water and other factors. A number of experimental stations in Syria have been carrying out experiments on nitrogen deficiency. The mission suggests that this program be expanded and supplemented by field trials on selected farms in various parts of Syria. The fertilizer for these field trials should be made available free or at nominal cost over a period of years sufficient to permit adequate testing. The mission recommends that a sum of £S 500,000 be made available for this purpose over the next five or six years.

The use of insecticides and pesticides has been almost entirely confined to cotton, and even for cotton they were applied extensively only in 1952 when dusting was made compulsory. Regular spraying and dusting of cotton and orchard crops should particularly be encouraged. A program of education and demonstration, combined with credit facilities for the acquisition of equipment and materials, is clearly necessary. Experiments should also be undertaken with modern weedicides, for there is little doubt that weeds at present greatly detract from yields.

If the use of fertilizers and insecticides is to be promoted, the cost should be reduced as far as possible. At present fertilizers are largely imported in the form of pre-mixed compounds containing a high proportion of carrier material readily found in Syria, and similarly, in the case of insecticides, essential ingredients account for only a small percentage of the volume imported. The mission suggests, therefore, that the possibility of lowering costs by establishing a plant for mixing fertilizers and making insecticides from imported ingredients should be explored.

Implements and Machinery

433
211
407

In Syria there is an enormous gulf between the employment of modern tractors and combines in certain areas and the use of the traditional peasant plow or *feddan* and hand-harvesting and threshing methods elsewhere. The tractor can undoubtedly do a far better job of cultivation. It breaks the hard soil pan so as to facilitate deeper penetration of roots and moisture, and it promotes seed germination by more effective pulverization of the soil. It is equally obvious that combines produce a cleaner grain with less waste than the traditional process of having animals trample the grain and winnowing the resulting product by hand.

The development of Syria's agriculture, however, hardly depends on the rapid expansion of mechanized farming. The use of mechanized equipment can be recommended only where labor is relatively scarce or where units of exploitation are large, as is the case in the Jezireh. Small farmers cannot afford costly, modern machinery. Cooperative ownership and operation of such machinery may ultimately be undertaken, and the mission does suggest, as indicated previously, that an experiment along this line be carried out. It can hardly be expected, however, that this type of cooperative, which is among the most difficult to manage, will spread rapidly in the future.

Far more important and urgent is the task of improving and supplementing the poor implements which the peasants now have at their disposal. They should not have to rely almost wholly on the *feddan* which barely scratches the soil and leaves perennial weeds to compete with crops for the limited supply of soil nutrients. The farmer should have a better plow, supplemented by a cultivator or spike-tooth harrow; a simple seed drill that might permit him to get better yields by sowing in rows instead of by broadcasting; pedal threshing equipment and a hand-operated winnower that would enable him to produce a cleaner grain with less effort; and a simple leveller that would help him to level his land and avoid waste of rain or irrigation water.

Programs to improve and develop implements for the small farmer have been successfully initiated in a number of countries such as India and Afghanistan. The mission strongly recommends that such a program be undertaken promptly in Syria. It would propose establishment of a small implement center in cooperation with the FAO or other technical assistance agencies. This center should be equipped with a shop in which

433
241
407

prototypes of useful implements would be made. These prototypes should then be distributed for supervised testing among selected farmers and arrangements would have to be made for the production of those found successful. Such a program need not be expensive. The mission estimates the capital cost at about £S 150,000 and recurring annual expenditures at not more than £S 100,000.

The problems of mechanized cultivation should not, of course, be neglected. Already an estimated total of 750,000 hectares is tilled by mechanical means. Over 1,300 tractors and 500 combines are being used today, primarily in the Jezireh but also, increasingly, around Aleppo. Mechanical farming is handicapped, however, by the high cost of fuel; lack of sufficient skilled labor to operate, maintain and repair machinery; inadequate repair facilities; excessive cost and, sometimes, deficient supplies of spare parts; insufficient knowledge of the suitability and capability of different types of equipment; and the utilization of too many kinds of machinery. Standards of maintenance are extremely low and repairs much too costly. The abuse of machinery greatly shortens its life. In the Jezireh, major repair facilities exist only in Kamichliye, and only two dealers have their own service stations. All these factors make mechanical farming excessively expensive. In the last two years, profits have seriously diminished as cereal prices declined and costs remained fixed. A reduction of costs is particularly necessary since the mechanically operated farms now contribute the bulk of Syria's exports of cereals.

Better transport facilities will do more than anything else to lower fuel costs. To deal with the other cost factors, a number of measures can be recommended. First of all, machinery dealers should be allowed to operate only if they abide by defined limitations on the price mark-up on machinery and spare parts; maintain prescribed minimum supplies of spare parts; and undertake to operate service and repair facilities in such centers as Kamichliye and Aleppo. Certain reputable dealers have declared to the mission their willingness to adhere to such qualifications, which have proved useful also in other countries. Secondly, the mission urges that short-term courses in the selection, operation and maintenance of farm machinery be organized at Kamichliye and Aleppo. Such courses should be conducted in the agricultural "dead season" and separately for owners and operators. The first should be instructed in the performance and capability of different types of equipment, in the supervision of operation and maintenance, and in the simple economics of mechanical farming; and

the latter should be taught elementary principles of repair and mainte- 433
nance. The courses for field operators and mechanics might well include 241
some in-service training in repair shops. The cooperation of reputable 407
dealers in organizing such courses should be enlisted. Finally, the mission proposes the establishment of a secondary agricultural school in Kamichliye to specialize in problems of agricultural engineering. Facilities for instruction in this subject should also be provided at the existing school in Aleppo. The mission envisages an expenditure of £S 2 million for such school facilities. The short-term courses could probably be made self-supporting. To initiate and help carry out this program, the mission suggests that the government obtain the services of one or two machinery experts through the FAO.

Cereals 243

Aside from the measures outlined above, programs to raise the yield 433
of certain crops must be undertaken. For cereals the development of higher yielding and more disease-resistant strains is of paramount importance. Although many varieties of wheat and barley are grown in Syria, little is known about their comparative worth. A large number of the more promising foreign wheat and barley strains have recently been imported for testing, but the funds, staff and facilities for an adequate testing program are largely lacking. The mission accordingly recommends that the Ministry of Agriculture be enabled to carry out a program for testing, selecting and propagating high-yielding and disease-resistant seed.[12] Since the shortage of trained Syrians may continue for some time, it is likely that the program will have to be handled by a foreign staff (FAO; the French Technical Assistance Mission in Syria). The staff should include a director in charge of planning, three plant breeders and a plant pathologist. They should be assisted by a staff of about 30 Syrians who will largely have to be trained for this purpose. The mission estimates the cost of such a program at about £S 4.5 million over the next five or six years.

For wheat and barley the aim should be to develop good varieties which mature early and can therefore be harvested before the extreme heat. For rice, which will undoubtedly be cultivated in larger volume as the irrigated area expands, the aim should rather be to develop slow-

---

[12] See Annex C, p. 304, for year-by-year recommendations.

Marketing

241
442
458

The mission now comes to a consideration of the last but by no means the least important agricultural problem, marketing. This subject has many aspects, including transport, storage and grading, quality control and price stabilization. Improved marketing practices can yield the producer better prices and the consumers a higher quality product.

Elsewhere the mission discusses the vital factor of transport, and it has already commented on the role cooperatives could play in the local marketing of agricultural products. Here the mission wishes in the first instance to focus on the great importance of better facilities for the storage, cleaning and fumigating of grain. The lack of these facilities and the consequences for Syria have already been emphasized. The mission found a widespread recognition of their need in Syria, except perhaps among the merchants, who naturally feel that public grain storage and the extension of credit on the basis of warehouse receipts will weaken their control of the market. The mission considers it imperative, however, that Syria proceed with a grain storage program in order to strengthen the farmers and to maintain Syria's position in an increasingly competitive world grain market.

It is estimated that in the next decade some 760,000 tons of grain, principally wheat and barley, will enter commercial channels annually, and that this volume will be distributed among the producing regions approximately as follows: Jezireh, 400,000 tons; Euphrates, 95,000; Aleppo, 95,000; Hauran, 60,000; Homs-Hama, 50,000.

The mission recommends that total storage capacity of about 230,000 tons be established by 1960 at an estimated cost of £S 21 million. In the grain port of Latakia a transit silo with a capacity of 20,000-40,000 tons should be built. In Aleppo new facilities with a capacity of 60,000 tons are needed to supplement existing warehouse space, serve the surrounding grain-producing areas and operate as a reservoir for the rapid replenishment of the Latakia silo. For the Jezireh the mission suggests storage capacity of about 150,000 tons. The Latakia and Aleppo facilities should be mechanized and furnished with cleaning and fumigating equipment. In the Jezireh, however, the mission suggests that provisionally only about a fifth be mechanized. The storage there would consist simply of covered sheds which could be economically built.

The Latakia and Aleppo storage will enable Syria to export clean grain,

free of infestation, which will better be able to withstand competition on 244
the world market and fetch higher prices. The Jezireh storage will make 442
it unnecessary for farmers to dump their grain on the market immediately 488
after the harvest, enable them to obtain credit on easier terms, and lower the cost of transport. All the facilities together will significantly reduce the substantial losses resulting at present from exposure to weather, infestation and rodents. The mission's estimate of the direct advantages resulting from the reduction of losses and the improvement in prices leads it to conclude that farmers and merchants would have ample incentive to utilize the storage facilities, even after taking into account the storage charges they would have to pay on the basis of operating costs and amortization.

We believe that the storage facilities, even when they have to be built by the government, should be operated by qualified private management under a long-term lease which would specify the maximum permissible storage charges. Farmers and merchants are unlikely to use facilities operated by the government itself.

Measures to improve the marketing of certain other products should 234
also be taken. Large quantities of raw milk are now marketed in major 442
cities without adequate quality control or veterinary inspection of dairy cattle. The UNICEF, concerned over milk supply for children, has apparently offered to provide equipment and assistance for the installation of a pasteurization plant in Damascus, and the mission urges that this project be carried out as promptly as possible. A similiar plant may be feasible for Aleppo. It is important that some control be established also over the source of supply. Periodic tuberculin and blood agglutination tests for the diagnosis of tuberculosis and brucellosis in dairy animals might, for example, be initiated. In Aleppo, where many dairy cows are kept in the city under unsanitary conditions which produce a high incidence of tuberculosis, the removal of dairy cattle to locations outside the city is strongly recommended.

Improvements in public abattoirs would also bring about better prices 253
for producers and provide a better quality meat for the consumer. Existing abattoirs are for the most part old, unhygienic and possess no means for salvaging many of the valuable by-products of slaughtering which could be used for the manufacture of fertilizers, chemicals and drugs. While complete renovation is not feasible in the immediate future, the mission suggests that a start be made by erecting a modern abattoir in Damascus at an estimated cost of £S 600,000.

656 435 A final comment must be made on price stabilization operations. At times in the past the government has intervened in the marketing of cereals in order to support the price or to protect the home market from the consequences of threatened shortages and excessive prices. Through the Cereals Office and its predecessor agencies it has engaged in buying and selling grain, and occasionally it has resorted to export prohibitions to safeguard domestic supplies. Under emergency conditions when the world supply of cereals is short, as in time of war or threat of war, such measures may be justified. Normally, however, it is better to allow the market forces free play. The history of government intervention in the market demonstrates that the government has often acted on the basis of information which subsequently proved erroneous in whole or in part. Frequently information on impending government measures has leaked out, giving windfall profits to privileged speculators. Above all, it is impossible in the long run to insulate the Syrian grain market from the world market. If there is a shortage in Syria and prices rise, some merchants will quickly seize the opportunity to import grain, and if world market prices decline, Syrian prices will inevitably have to follow if exports are not to be lost. On the whole it would be far better for the government to concentrate on the task of improving its crop statistics and to publish frequent and more reliable information on production and prices for the guidance of farmers and merchants. If emergency conditions arise, it will always be possible to authorize government intervention by special decree.

657 *Projected Expenditures*

241 231 We can now recapitulate the government expenditures in the field of agriculture and animal husbandry which are envisaged over the six years up to the end of 1960. Total projected outlays amount to around £S 336 million, or about £S 56 million per year. This represents a very substantial increase over expenditures in recent years which the mission has found difficult to ascertain but which probably have not averaged much more than £S 11 million a year.

TABLE 6 Expenditures on Agriculture for the Six-Year Period 1955-60

654
241
231

(Thousand £S)

		Total	Average annual
Irrigation and reclamation		197,200	32,866
Aerial and soil surveys and mapping		4,500	750
Credit, cooperatives, education and marketing			
Capital for Agricultural Bank	50,000		
Cooperatives	500[a]		
Rural Community Improvement Program	2,700		
Agricultural schools	2,750[a]		
Stipends for foreign study	750[a]		
Grain storage	21,000		
Damascus abattoir	600		
		78,300	13,050
Research and experimentation			
Central direction	1,800[a]		
Seed selection and propagation	2,700[a]		
Crop rotation research and trials	1,000[a]		
Livestock breeding	1,200[a]		
		6,700[a]	1,117
Encouragement of better agricultural practices			
Fertilizer	500		
Forage and green manuring	500		
Improvement and establishment of pastures	500		
		1,500	250
Special livestock program			
Veterinary services	1,200[a]		
Livestock shelters	1,720		
Reseeding of grazing land	200		
Development of desert water supplies	2,250		
		5,370	895
Agricultural settlements		4,500[b]	750
Miscellaneous			
Small implements center	525		
Special instructions on operation and maintenance of agricultural machinery	500		
Forestry service	500[a]		
		1,525	254
Continuing expenditures of Ministry of Agriculture		36,700[c]	6,117
Grand total		336,295	56,049

---

[a] Additional expenditures beyond levels of recent years.

[b] Other than those financed by the Agricultural Bank.

[c] Excluding special and additional expenditures specified elsewhere, but including about £S 700,000 for extra overhead expenditures.

ANNEX C *NOTES ON AGRICULTURE*

1 POPULATION, REGIONS AND SOILS

Rural Population

162 Syria's agricultural population can be divided into groups differentiated
619 by their social order.
233 *Nomadic tribes.* Bedouin tribespeople form an important unit of the
rural population, numbering an estimated 150,000 and living in various stages of settlement from pure pastoral nomadism to almost permanent agricultural communities. Among the larger tribes the Tay and part of the Jubur have become practically sedentary, the Shammar and Shashans remaining nomadic or semi-nomadic. There are also numerous small nomadic tribes roaming the desert between the cultivated belt and the Jordan border. These harvest the scanty desert grass with their flocks of sheep and goats and their herds of camel and a few cattle, and contribute considerably to the country's livestock production. A large part of Syria's meat, wool and dairy products is produced by the Bedouins. Their standards of living and education are quite low.

The increasing exploitation of arable land for crop production during recent decades correspondingly reduced the grazing area and, may, if continued, threaten a considerable reduction in livestock.

162 *Settled villagers.* The nearly two million villagers spread over 5,500
241 compact villages form the most important segment of the agricultural
511 population. They are the true cultivators of the soil whether they own the
land or work on it as tenants or laborers. A large number farm entirely for subsistence. Even where there are large community pasture lands, the farms are usually small, frequently too small to give an economic return. Consequently incomes are generally low and many landowners, tenants and sharecroppers are constantly indebted to moneylenders. Although illiteracy among the villagers is on the decrease, education remains at a low standard.

The village people produce most of the crops, raise part of the livestock and supply the country with the bulk of its food and raw materials. Their agricultural activity as a rule is dominated by manual and draft animal

operation, in striking contrast to large private holdings where the most 162
modern machinery is used. Measures to raise the standard of living of this 241
group must be one of the main objectives of any development program; in 511
the first instance this must be effected through education, improved systems of land tenure, and better credit facilities.

Lessees and landlords. Some city dwellers have interests in agriculture 241
as leasehold operators of tracts of state domain, or as absentee landlords. 427
Although their interests rarely coincide with the demands of sound long-term farming practices, this segment of the population has been instrumental in opening new farm tracts (such as the Jezireh) and in introducing new crops, thereby contributing much to the national economy. The cultivation of the large absentee holdings is generally left to sharecroppers.

Sharecroppers. Each sharecropper is assigned a parcel of land from which, after the apportionment of the crop, he can hope to gain little more than a bare subsistence. In rainfed areas the sharecropper customarily receives rather less than 30% of the crop if he provides only his labor and around 70–75% if he also supplies the working capital; the percentages may be slightly higher in sparsely populated areas, and lower where population pressure is heavier. On irrigated lands the landlord takes 65–75% of the crop if he provides seed and water, and about half if the sharecropper provides the working capital.

In the long run, the position of the sharecropper would be more tolerable if the productivity of the land and his share of it were raised. At present, yearly land assignments may vary, with the result that the cropper has no incentive to improve the land. The restricted area of the assignment and lack of proper equipment, draft animals and money capital contribute to the permanent indebtedness of sharecroppers and their very low standard of living. Measures to improve their lot should include improved tenure status, Agricultural Bank and cooperative assistance in providing working and fixed capital, and resettlement schemes to relieve local land pressure.[1]

Agricultural Regions

241

In terms of natural conditions and the types of agriculture practiced, 438
Syria can be divided in nine main agricultural regions. 811

The Hauran and the Djebel Druze. The Hauran and the Djebel Druze includes the mountains of the Djebel Druze and the Julani in the south-

---

[1] See Chapter 3, Sections III and VI, of the Main Report.

244 west corner of Syria. The cultivated soil varies from fertile shallow chestnut in the Djebel Druze to the very fertile deep brown of the plains of
458
311 Hauran. Part of the shallow, reddish-brown soil extending towards the Anti-Lebanon and the basin of Damascus is uncultivable because of its stony character.

The small to medium-size farm is characteristic of this region. Mules and oxen are the customary draft sources, mechanized agriculture being restricted to the few larger holdings. Wheat and barley are the main winter crops; vetch, lentils and sorghum the summer crops. The acreage under irrigation is insignificant. Although now outstripped by the newly opened Jezireh, the Hauran, famous as a granary in the Greco-Roman period, remains a leading cereal-producing area, and the yields in comparison with other areas are high. Excellent grapes and other fruits are produced in the Djebel Druze, but because of unfavorable market conditions and outlets and the lack of processing facilities and storage, much of each harvest is wasted. In the Julani region, where crop production is uneconomical because of the stony character of the landscape, but where good grazing conditions prevail, double-purpose cattle, for meat and draft, are raised successfully. In this area, land pressure is an urgent problem, especially in the Djebel Druze where many uneconomical small farms hamper progress.

Damascus basin foothills of the Anti-Lebanon. The ample layer of fertile reddish-brown soil of the Damascus basin becomes slightly saline in the Merj and towards the swamps of Lake Ateibe, though under drainage and irrigation these areas would probably be suitable for crops. The bottoms of many of the Anti-Lebanon valleys are covered with more or less deep layers of light brown to dark brown soils of moderate to high fertility, with gravelly alluvium bordering the western foothills. Irrigation water is obtained from the numerous streams, and the basin of Damascus is entirely watered by the Barada river coming from the fertile Zebedani valley. The Barada and many of the small streams offer possibilities of storing winter waters for the future expansion of irrigation.

Numerous orchards and vineyards are found in the Ghouta and in the various valleys, producing considerable quantities of fruits, grapes and nuts. Vegetable, hemp and fodder products, and in recent years cotton and sugar beets,[2] form the main agricultural crops of the Ghouta. Wheat and barley are the traditional regional winter crops and beans and peas the summer ones. As a rule farms are of small to medium size; particularly in the

---

[2] Sugar beet production in 1955 is expected to be over 30,000 tons.

Ghouta, dairy farming has been developed. The typical Damascus dairy 241
breed is an excellent milk producer and apparently quite resistant to the 438
heat. 311

The basins of Jairout, El Daou and Palmyra. The third region consists of the brown to grey desert soil. Crop and fruit cultivation, possible only under irrigation, is carried out in small depressions and plots along the bordering mountains where deep layers of very fertile soil occur. During the Greco-Roman period and earlier, a great part of these extensive basins, including the oasis of Palmyra, still famous for its fruits, were prominent producing centers. There are indications that moderate quantities of subterranean water exist.

On some of the best terrain, particularly on the watered alluvial soils, the intensive cultivation of sugar beet, cotton and wheat is possible. At Ain el Barde, for example, record yields are now obtained and reseeding of some of the large natural pasture now used by Bedouins appears to be feasible.

The western plains and hills. The gently undulating land northeast and southwest of Aleppo, the plains of Hama and Homs, and the hills east of the Djebel Ansariya may be broadly grouped as a single region. Soil types range widely from the stony and gravelly desert to the terra rossa and chestnut brown. Local productivity varies greatly with soil and rainfall, but taken as a whole this region ranks very high among producing areas.

The main winter crops are wheat and barley; vetch, beans and sorghum are the principal summer crops. Roughly one-third of the country's wheat production and nearly one-half of its barley come from this region. During the last few years, however, sugar beet and cotton have established themselves as cash crops, and in 1953 the region's cotton output accounted for about three-quarters of Syria's total production. Fruit and nuts in substantial quantities are produced in large orchards, sizable vineyards and olive groves in the Homs, Idlib and Aleppo areas. Most of the land holdings are large, cultivated mainly by sharecroppers; small holdings are in the minority and many of these are too small to be economically justified. As a rule, the best land is already cultivated and though large state domains exist, there is very little land available for further crop expansion. Farm machinery is becoming more common, although the area is still cultivated mainly by the *feddan* and other obsolete implements. Dairy farming is practiced around the larger population centers (e.g., Aleppo) but the industry is still in its infancy and pure-bred stock has been imported by only

244 a few progressive farmers. Mixed farming and pure sheep farming could
438 be successfully pursued in the eastern part of this region, but here, as else-
311 where, the greatest handicap is the land tenure system and unfavorable sharecropper conditions.

The coastal plains of Tartous and Latakia and the foothills of the Djebel Ansariya. Along the Mediterranean seashore up to 80% of the deep light sandy soil lends itself well to tree cultivation, particularly to irrigated citrus cultivation.

In general the region is well suited to highly diversified agriculture; the present system is that of winter cereals and vetch and summer crops such as summer legumes, melons and tobacco. About three-quarters of Syria's tobacco is grown in this agricultural district, Abu Riha, Chek el Bint and Tombak being the best known types. The recent cotton boom had its repercussion in this area, particularly as cotton can be grown without irrigation. The region is also well known for its olive groves. Citrus cultivation has gained in importance during the last decade but has only recently begun to receive the governmental attention it deserves.

Manpower is plentiful but land is scarce. The whole region is characterized by small and frequently uneconomic farms of less than 10 hectares. Pressure on the land is particularly evident in the foothills where crops are often farmed on marginal and submarginal land. Manual and animal draft operations are the rule, mechanized farming the exception. Livestock production and dairy farming is insignificant though in many parts of this region they would offer a better yield than does the existing farm system.

The central and northern plains, including the Jezireh. The central and northern plains region follows the line of the "fertile crescent", a strip varying in width from 50 to over 100 kilometers, extending in a semi-circle around the Syrian desert. Shallow reddish-brown type soils prevail, light at the fringe of the sub-desert, deeper, darker and more fertile toward the north. Landholdings are generally large and include great tracts of state domain. The size of individual estates runs from a few hundred hectares in the central plains to several hundred thousand hectares in the Jezireh.

Agriculture is extensive, rather than intensive, and the general manpower shortage has accelerated the introduction of the most modern equipment to cultivate and harvest the region's cereals and small grains. This is particularly true of the Jezireh, which, unlike the central plains, has been only recently opened to organized agriculture, and is now Syria's largest wheat and barley producing area; it accounts for over 40% of total Syrian

wheat production. While the best soils are practically all in production, 241
large areas of medium quality and marginal land are still available and 458
some of these might be cultivated after an appraisal of their productivity. 311
The recent speculative farming wave is responsible for the neglect of such appraisals and far too much marginal land has been broken up and cultivated. Dry farming in this belt (particularly south, east and west of Hassetche) depends greatly on the amount and distribution of the rains.

Although wheat and barley are the principal crops, mention must be made of the cotton and rice grown in the irrigated Khabour valley. The high cotton prices of recent years encouraged speculative cotton growing with varying degrees of success. Rice cultivation has been rather successful, but as it demands the highest water duty the cultivated area has declined somewhat in favor of cotton.

The northeast corner of the Jezireh. Toward the region of Deirik the brown soils of the steppe give way to chestnut brown, with rich black soil in the extreme corner of Deirik. The well-watered plains and undulating lands are intersected by the Jagh-Jagh, Khabour and Soutane rivers and their numerous tributaries, making possible irrigation over vast areas. Tractor cultivation is developing rapidly in this newly opened area, although in comparison with the western Jezireh and the steppe belt the region is less mechanized and more densely populated.

Practically all crops could be grown even without irrigation but wheat and barley are the leading winter crops and sorghum and sesame the main summer crops. Rice is an old staple but is now giving ground to cotton. In the region of Deirik good grapes, excellent potatoes, tomatoes and other vegetables are successfully grown but inadequate transport and storage facilities make their economical exploitation difficult. Livestock, particularly sheep, has greatly declined, due to the expanded crop area. The land is very well suited to raising cattle and beef. A diversification in land use would result in a more balanced and prosperous economy.

The valleys of the Euphrates and Khabour, and the Ghab depression. Though situated in entirely different regions and consequently showing different physiographical aspects, the large river valleys may be classified together in terms of soil fertility, cultivation methods, land tenure systems, population density and development potential.

In the Euphrates and Khabour valleys, the alluvial soil of deep silt loam has excellent agricultural qualities. The soil in the Ghab marshes, lying astride the Orontes about 40 kilometers east of Latakia, consists mainly of

241 458 311 heavy clay alluvium in the valley proper and terra rossa and some peat soil along the slopes. Whereas drainage is the main problem in the Ghab, the problem in the Euphrates and Khabour valleys is to extend irrigation so as to double the present cultivated area. The farms vary from rather large holdings of absentee landlords, cultivated by sharecroppers, to very small farm units owned and worked by the farmer himself.

Crop rotation followed in the irrigated area of the Ghab generally takes the form of barley, cotton, wheat and cotton, while the rotation in the Euphrates valley is similar to that in dry farming regions: cotton or summer crop, fallow, winter wheat.

Yields are generally higher than in the rainfed regions but full use is not made of the available water and the irrigation methods are backward in many parts. Though better yielding cash crops have been introduced, the farmer as a rule cultivates only the few traditional crops. In these areas agricultural education could do much to further more economic water utilization and wider crop diversification.

The lands in the immediate vicinity of the rivers are fully irrigated but not fully utilized during the entire year. Hundreds of thousands of hectares on the somewhat higher land on both banks of the Euphrates and in the lower Khabour valley form a potential future reserve, though the capital outlay required to bring them under cultivation would probably have to be furnished by the government.

The central plains of the Syrian desert. In the central plains low rainfall and extreme temperatures render agricultural production practically non-existent but the desert is quite important as a natural grazing area (except during the absolutely dry months) for the sheep and camels of nomadic Bedouin tribes. Many parts of the desert, particularly the large depressions, could be better utilized if desert wells were constructed.

134 *Types of Soil*

311 The soils of Syria rank from the world's best to the poorest roughly in the order of (1) alluvial, (2) black, (3) chestnut brown and terra rossa, followed by (4) brown and reddish brown, and (5) grey sub-desert. According to a preliminary survey conducted by an FAO soil specialist the area covered by each of these various types of soil is approximately as follows (in thousand hectares):

4. Mixed farming should be promoted in sugar beet areas. The cash return from sugar beet production is three to six times larger than that from wheat and other crops. Moreover, the leaves from one hectare of sugar beet make an excellent silage fodder, equivalent to about 4.5 tons of good hay. 249

V CROP DIVERSIFICATION

241 • 311

Practically all temperate and many subtropical crops can be and are grown in Syria. Their distribution, however, is very poor. The mission strongly emphasizes the desirability of a wider diversification to lessen the risks and to ensure a better use of available land and manpower. In nearly all the rainfed zones leguminous fodder crops could be substituted for the customary fallow. These would provide the soil with needed nitrogen, improve its structure and serve as fodder. If livestock were adequately fed for a single season, human food production would probably thereby be increased, indirectly, to a greater extent and sooner than if the land were sown to crops for human consumption. An increase in livestock, particularly in irrigated zones but also in the rainfed area, means fuller employment and higher income for the rural population.

To supplement winter vetch and berseem, the mission suggests the introduction for field trials of the cluster bean (*Cyanopsia sp. sp.*), a grain and forage plant widely cultivated in Sicily; some of the varieties can be grown with sorghum. In addition there is the possibility of goat's rue (*Galega orientalis*), a bushy, erect perennial herb of high nutritive value, and of sulla (*Hedysarum coronarium*), which can be used as green fodder or hay and which ranks with red clover in nutritive value. The latter grows best in deep, rich calcareous soils, but can also be grown in poor soil if it contains lime. Sulla can be sown alone, with cereals, or in mixtures with other legumes; it yields up to 120 tons of green matter per hectare under irrigation, and it may produce from 16-50 tons even on non-irrigated land.* Trials to reseed a wild species of alfalfa, reported to grow in the Anti-Lebanon region, should be undertaken in other areas. Cultivated lucerne and alfalfa (*Medicago sp. sp.*) have responded successfully; their more extensive cultivation should be encouraged. Of the 50 or more species the most common is *Medicago sativa* and *M. varia*, of which many strains are

---

* FAO publication, *Legumes in Agriculture*.

341
311
adapted to drought and to hard winters; they can be grown as either winter or summer crops. The same can be said of the clovers (*Melilotus sp. sp.*) and the fenugreek (*Trigonellia sp.*), good fodder plants which can be mixed with oats or vetches.

Even under an irrigation system the selection of hardy cultural winter crops for Syrian conditions is very restricted and none can replace the winter cereals as cash crops. A greater choice is possible among summer crops, some of which may become quite significant in the future.

Besides the great variety of cow peas (*Vigna sp.*), vetches (*Vicia sp.*), chick peas (*Cicer sp.*), lentils (*Lens sp.*), beans (*Phaseolus sp.*) and peas (*Pisum sp.*), the cultivation of peanuts (*Arachis sp.*) and soya (*Soya max*) is strongly recommended. Both are grown in Syria but current production is negligible, in spite of the fact that these crops are adaptable to both small and large size farming. In the coastal plains, in many parts of the fertile crescent and particularly in the Euphrates and Khabour valleys, there are ideal soils (well drained, fertile sandy loams) and favorable conditions of climate (good rainfall or irrigation possibilities during the growing and seed setting periods, combined with hot weather during the time of seed ripening) for their cultivation. Preferably, the multi-purpose peanut should be grown in rotation with maize, sorghum or hemp. Areas in Syria where peanuts could be grown successfully must run into tens of thousands of hectares.

An even wider range could be found for soya, which could be cultivated for human consumption, concentrates for farm animals, oil and for the manufacture of many other valuable materials (e.g., plastics). The soya plant also makes good hay, silage or pasture. Its increased production would be of great value to Syria, for its flour, when mixed with wheat flour, would improve the national diet. Soya thrives best in somewhat moist loose soil, but is also rather drought-resistant. Numerous varieties and strains exist, adapted to different growing conditions and early maturing from 60 days on.

A departure from the traditional farming system and a shift to greater diversification and mixed farming will take time and can be achieved only through demonstration and education. No radical change can be expected in the next year or two; intercropping of the cereals with leguminous plants would be a good start. Distribution of free seed and some financial help to the owners or sharecroppers of small farms selected for demonstrations could undoubtedly accelerate the recommended changes.

VI IRRIGATION TECHNIQUES

Even when the irrigation program gains momentum, water will remain one of the principal limitations on agricultural expansion. Optimum water utilization requires making the most of available supplies and avoiding waste, as well as limiting cultivation in irrigated areas to those crops which need irrigation.

The Use of Water

At present, farming techniques are such that in many areas large quantities of water are wasted, particularly by surface evaporation,[7] and only rarely is the water evenly distributed over the land. Development of the best irrigation techniques (such as furrow irrigation) for the soils of the various regions clearly requires the establishment of research and demonstration sections in the agricultural stations existing or recommended for the various localities, for the farmers will rarely adopt new methods unless they can see the benefits at first hand.

Crop Restriction

Since the quantity of water is limited, it is equally important that irrigated fields be reserved for those crops which will derive most benefit. Conversely, crops such as cotton and rice, whose cultivation is hazardous under dry-farming conditions, should as far as possible be grown only on irrigated areas; sugar beet also requires irrigation in areas where the rainfall is less than 600 mm. A licensing system already exists with regard to cotton cultivation and it is important that it be enforced. In the long run, however, the farmer himself should be able to assess the profitability of crops grown under various conditions. The demonstration stations mentioned above should therefore be equipped to show how different quantities of water affect a variety of crops. To assure year-round utilization of land in irrigated areas (as elsewhere) farmers must also be educated in the use of soil-replenishing crops which will at the same time profitably replace fallow.

[7] Conversely, many farmers do not know how to drain their land when there is too much water.

APPENDIX

TABLE 1 Crop Areas, 1943–53

(*Hectares*)

Kind of crops	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953
Wheat	503,622	570,725	751,139	810,485	843,472	788,808	987,856	992,240	1,036,693	1,167,150	1,314,422
Barley	242,564	272,650	384,128	370,799	365,040	341,626	347,910	416,445	343,556	396,621	428,010
Lentils	49,558	43,885	46,151	42,593	49,604	46,184	51,407	59,194	65,744	66,216	70,909
Maize	13,790	12,314	23,882	23,665	22,070	33,092	25,863	24,812	16,041	19,246	18,115
Sorghum	78,305	64,075	107,086	94,964	104,012	90,490	92,905	94,042	71,418	106,114	96,456
Rice	1,800	2,086	6,971	7,609	8,165	7,487	7,636	9,350	531	2,818	5,339
Cotton	15,240	16,695	17,525	19,837	19,335	23,998	25,296	77,961	217,352	189,271	127,558
Olives	48,408	59,072	75,701	78,107	79,367	78,571	79,624	80,695	79,911	82,471	85,641
Sugar beet	—	—	—	—	—	—	—	—	221	2,624	4,264
Total	953,287	1,041,502	1,412,583	1,448,059	1,491,065	1,410,256	1,618,497	1,754,739	1,831,467	2,032,531	2,150,714

SOURCE: Statistical Abstracts.

APPENDIX

TABLE 2 Crop Production, 1943–53

(Tons)

Kind of crops	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953
Wheat	525,619	438,767	415,143	577,874	403,826	656,729	909,322	830,025	509,642	900,000	870,000
Barley	314,982	250,268	247,568	284,184	168,813	305,147	357,467	322,012	154,701	466,924	472,457
Lentils	35,310	23,843	27,577	19,453	39,227	33,105	54,807	26,551	30,231	50,597	62,814
Maize	28,540	17,615	23,835	27,516	28,582	37,646	39,102	35,684	21,824	22,555	22,430
Sorghum	91,370	42,315	85,731	58,866	67,586	63,392	57,290	75,725	24,171	106,114	123,692
Rice	3,650	9,767	14,506	12,000	21,569	19,099	20,031	18,005	927	5,779	16,176
Cotton fiber	3,087	3,008	4,342	4,784	5,444	9,110	13,323	35,495	62,924	58,074	46,984
Olives	72,717	11,156	158,940	45,499	80,215	102,998	91,365	18,636	90,547	32,726	48,902
Olive oil	23,107	2,026	16,791	6,242	11,116	10,252	14,436	3,580	8,516	7,241	11,071
Sugar beet	—	—	—	—	—	—	—	—	2,715	55,320	49,572
Total	1,098,382	798,765	994,433	1,036,418	826,378	1,237,478	1,557,143	1,365,713	906,198	1,705,330	1,724,098

SOURCE: Statistical Abstracts.

244
407

APPENDIX

TABLE 4 Agricultural Machines, 1953

District	Tractors	Fertilizer spreaders	Harvesters		Combines		Threshers		Insecticide sprayers		Dusters	
			Animal-drawn	Tractor-drawn	Self-propelled	Tractor-drawn	Manual	Mechanical	Manual	Mechanical	Manual	Mechanical
Damascus	63	1	5	0	3	1	897	3	91	10	98	—
Homs	65	0	0	0	1	4	15	0	70	1	200	12
Hama	69ᵃ	0	0	2	5	0	0	0	1,500	22	265	—
Dera'a	26	5	0	1	0	2	12,003	0	10	1	210	—
Deir ez Zor	166	0	0	20	4	74	0	0	70	—	—	—
Hassetche	340	0	20	72	420	0	—	0	22	40	0	—
Aleppo	352	0	0	10	49	10	2,002	0	21	5	92	10
Latakia	53	0	2	0	0	4	21,000	0	51	5	91	6
Soueida	1	0	0	0	0	0	100	1	200	0	200	—
Total	1,331	6	27	105	482	95	36,017	4	2,035	84	1,156	28

ᵃ Estimate.

SOURCE: Ministry of Agriculture and other sources.

Economic Benefits

The mission estimates that the gross value of the produce of the Ghab 312
area will be in the neighborhood of £S 63 million annually, or about £S 47 653
million after deducting the amount already produced in the area in 185
question. The production of cotton, maize, sorghum, rice and sugar beets 241 ●
is particularly likely to have a marked impact on Syria's balance of trade. 166
It may be assumed that the output of cotton and cottonseed will in effect be added to the country's exportable surplus; the additional rice production may make Syria fully self-sufficient in that commodity; and the sugar beet production should permit a considerable import saving.

In addition to the project's contribution to an increase in national income and an improvement in the balance of payments, the settlement of farmers in the area made possible by the project will assist in relieving the present population pressure in the province of Latakia and particularly in the Alaouit mountains. In Latakia, for example, the amount of cultivated land available per person is less than 50% of the average for Syria as a whole. Settlers in the Ghab will be able to earn substantially more than the bare living they have been able to eke from the soil in the past.

Organization

The "Administrative Office of the Drainage and Irrigation Works of 647
the Ghab Lands" was created in 1951, to be attached to the Ministry of 653
Public Works until the technical work is completed. It will be responsible 185
for the design of the works, award of contracts, supervision of construction, 312
payment of expenses and for sale of the land. As parts of the project are completed, the Office will take care of the operation and maintenance of the dams and of the irrigation and drainage networks and will collect water charges. During the planning and construction period the Office should recruit and train staff to carry out the continuing operation and management of the project.

It is important that the policy, and the attendant operating and budget delegations, provide for the establishment and operation of the agricultural research centers and for a long-range educational and farm demonstration program; otherwise, it will be practically impossible to achieve acceptable land use in the area.

3:Royal Institute of International Affairs U-4 (no date)1954 M1 Middle East

SYRIA MD1
Lebanon ME1

Chapter Ten

SYRIA AND LEBANON

THE LAND AND THE PEOPLE

S
THE area of the present Syria and Lebanon lies to the north of L
Arabia Deserta and is the western horn of the Fertile Crescent. 131
The two republics do not enclose within their boundaries a 101
natural geographic entity and their climate and topography are 133
best studied in relation to the surrounding countries;[1] but within the political boundaries of the two states, the following geographical divisions may roughly be distinguished:

(1) *The Coastal Strip*. This is about twenty miles wide near S
Latakia and rather less just north of Tripoli, but in some places L
disappears and the mountains meet the sea. Olives, bananas, 133
citrus, and vegetables are cultivated intensively near Beirut. [241]

(2) *The Mountains*. Starting from the north, the first coastal mountains are the Jebel Ansariya (also known as the Alawi Mountains) which average 4,000 feet and are well populated on
the western slopes. To the south is the Homs–Tripoli gap and S
then starts the Lebanon range with peaks of over 10,000 feet. L
Even on the upper slopes of this range water is plentiful, there [312
is close cultivation, and the villages and towns are prosperous. 241]
Near Beirut are situated the mountain resorts to which most [361
of the city workers move each night when the summer brings 529]
its humid heat. The interior ranges of mountains lying parallel to that of the Lebanon are the Anti-Lebanon (between Homs and Zahle) reaching over 7,000 feet and the range of Hermon (between Zahle and the Israel border) which reaches 9,200 feet. Water and cultivation are far less plentiful on these than on the coastal mountains. Farther inland still and to the south of Damascus lie the Leja, a bleak area of igneous rock, and the Jebel Druze, which reaches 5,000–6,000 feet and lies north of the Jordan border.

(3) *Plains and Plateaux*. Hardly any of the territory of Syria and Lebanon lies less than 700 feet above sea-level and south of Hama almost all the land is over 1,600 feet. The richest agricultural land is on fairly high ground and forms part of a

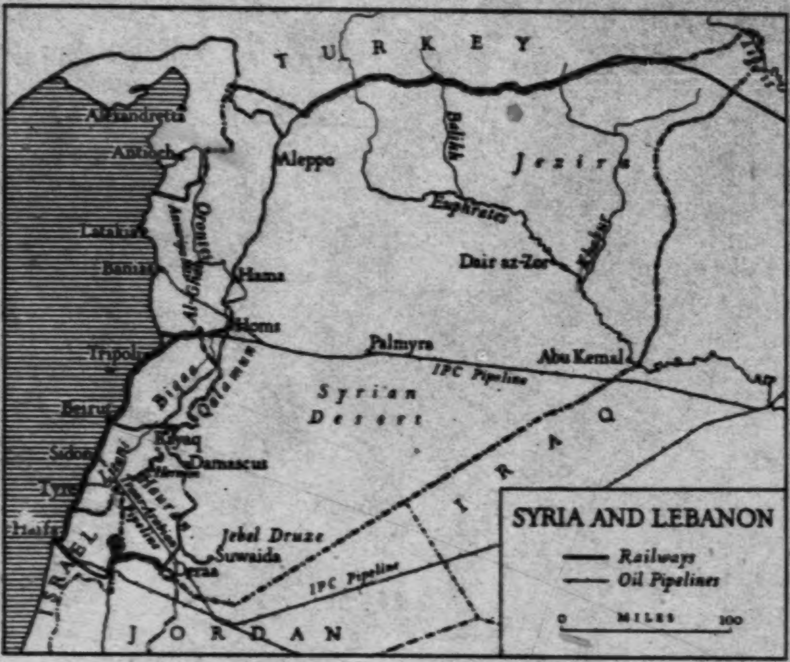
---

[1] See W. B. Fisher, *The Middle East; a Physical, Social, and Regional Geography* (London, Methuen, 1950).

?:Royal Institute of International Affairs U-4 (no date)1954 M1 Middle East

SYRIA MD1
Lebanon ME1

S
L
102


TURKEY
Alexandretta
Antioch
Aleppo
Balikh
Jezira
Euphrates
Khabur
Tigris
Dair az-Zor
Latakia
Banias
Orontes
Hama
Homs
Tripoli
Palmyra
Abu Kemal
IPC Pipeline
Syrian Desert
Beirut
Biqaa
Qalamun
Rayaq
Sidon
Damascus
Hermon
Tyre
Litani
Hauran
Haifa
ISRAEL
Jebel Druze
Suwaida
Deraa
IPC Pipeline
IRAQ
JORDAN
SYRIA AND LEBANON
Railways
Oil Pipelines
0 MILES 100

S
L
133
[241]

crescent which (starting from the Iraqi border) comprises the Jezira, the countryside of Aleppo, Homs, and Hama, and the fertile and beautiful Biqaa valley. The cultivation of cotton and cereals is particularly successful in the north-eastern corner of Syria where there has been great general development in the last five or six years. From Homs one road leads south to the Biqaa valley which continues between the two mountain ranges of Lebanon and Anti-Lebanon, past Zahle to the southern border of Lebanon. Farther inland is the road to Damascus which passes to the east of the Anti-Lebanon over the Qalamun plateau. This is mostly barren land, reaching over 2,000 feet; the areas of cultivation usually need more water, but suffer occasionally from bad floods. The oasis of Damascus is known as the Ghouta and there every drop of water in the two rivers is made use of, by an ancient system of canals which follow the contours and provide water lavishly as they gradually lose height. Between Damascus and Jordan lies the Hauran plateau much of which is about 2,000 feet above sea-level; here there is cultivation of cereals but few trees are now left and there is insufficient water to ensure good crops each year.

(4) *The Desert.* To the south and to the east of the Fertile Crescent there spreads a desert that extends southward for over

3:Royal Institute of International Affairs U-4 (no date)1954 M1 Middle East

SYRiA MDI
LEbANON MEI

S
L
648

pensated partly by her transit trade in goods and partly by her gold and currencies market. Syria wanted a controlled economy with import restrictions, protection of Syrian industries, and independence from French financial policy, but Lebanon's interest was to encourage all trade movements and to rely on franc support: moreover, the two countries could not agree on the division of customs dues. After years of arguments and negotiations the economic partnership was finally terminated on 14 March 1950 and customs posts were established along the common frontier. Since then agreements have been drawn up despite Syrian reluctance, but little has been achieved towards the re-establishment of economic union. It is therefore necessary to consider the economies of the two countries separately.

(*a*) Syria

S

Agriculture

•241

Over half but less than three-quarters of the cultivable area of Syria is, in fact, under cultivation. Since 1946 there has been a great increase in the number of pumps and tractors in use (there were 300 tractors in 1948 and 1,342 in 1951) but, as the following table shows, the cultivated area can still be extended.

S
L
311

7

ESTIMATES OF THE USE OF LAND, 1950

	Syria		Lebanon	
	(*sq. miles*)	*Percentage of Total*	(*sq. miles*)	*Percentage of Total*
Cultivable				
Cultivated under rainfall	8,400	12	803	20
Cultivated with irrigation	1,400	2	115	3
Potentially cultivable	14,000	20	700	17
Uncultivable				
Forests	1,600	2	285	7
Pasture	21,000	30	27	1
Desert, mountain and marsh	23,600	34	2,085	52
Total Area:	70,000	100	4,015	100

(Sources: FAO, *Yearbook of Food and Agricultural Statistics, 1952*; UN, Dept. of Economic Affairs, *Review of Economic Conditions in the Middle East, 1951–2.*)

S
241
S
423

Some progress in mechanized farming has been made in recent years, but much of the land is tilled as it was 2,000 years ago. The predominant form of land tenure is share-cropping by tenants on estates of large and medium size. Small holdings under 25 acres prevail in areas of intensive cultivation, and at present are estimated to constitute only 15 per cent of the total

3:Royal Institute of International Affairs U-4 (no date)1954 M1 Middle East
SYRIA MDI

cultivated area. Holdings of 25–250 acres are estimated to take 423
up 33 per cent of the area and holdings over 250 acres 29 per cent. State land is estimated to represent 23 per cent of the total cultivated area. Decrees for the distribution of state lands were issued in 1952: their implementation, at the time of writing, is still under review. Legislation to prevent the subdivision of plots by succession inheritances is also under consideration; at present a four-acre plot may have thirty-seven owners, and its management is profitable only to lawyers.

The approximate acreage and crop and yield of the main 241
products are shown in the following table. 433

MAIN CROPS

	Area (000 hectares)			*Production* (000 metric tons)			*Yield* (100 kg. per ha.)	
	1950	*1951*	*1952*	*1950*	*1951*	*1952*	*1950*	*1951*
Cotton (lint)	78	217	142	35	49	49	4·6	2·3
Wheat	992	1,037	900*	890	510	850*	8·4	4·9
Barley	416	344	400*	322	155	350*	7·7	4·5
Vegetables	68	66	..	47	40	142	..	..
Tobacco†	10	11	..	9	9	..	8·7	..
Rice (paddy)	7	..	..	24	6	6	19·3‡	..

.. = not available.

* The Banque de Syrie et du Liban (*Excercice 1952*) quotes the following figures for 1952 (in thousands):

Wheat: area = 1,180, production = 805.
Barley: area = 396, production = 467.

† Including Lebanon (annual production about 2,000–3,000 tons). ‡ 1949.

(SOURCES: FAO, *Yearbook of Food and Agricultural Statistics, 1952* and *Monthly Bulletins of Statistics*, 1953; vegetable figures from Banque de Syrie et du Liban, *Exercice 1952*, Paris, 1953.)

Wheat is the traditional staple crop of Syria and in a normal 243
year a quarter of a million tons can be exported. But the poor 439
harvest of 1951 necessitated wheat imports of about 50,000 241
tons. The 1952 wheat crop, however, once more increased to 433
over 800,000 tons. Barley is also grown and exported and, though the acreage has diminished somewhat since 1949, the crop is adequate.

In 1950 fortunes were made from cotton which fetched a high 248
price for the abundant harvest. The acreage sown to cotton 433
trebled between 1949 and 1950 and again in 1951. But while in 1950 the cotton yield was high, the 1951 harvest proved disappointing because of drought and attacks of the boll weevil. Despite a fall in cotton acreage in 1952—due chiefly to the downward trend in cotton prices—that year's output was maintained at the 1951 level, thanks largely to better methods

248 433 of cultivation. Syrian cotton is a 'Lone Star' medium-staple variety and is of better quality than is needed for some locally-made clothes, which accounts for the fact that Syria both exports and imports cotton. There is still a long way to go before the country's cotton cultivation is as efficient as in Egypt or the Sudan, but cotton has become Syria's most important export commodity and the cotton acreage increased by no less than 800 per cent between 1945 and 1951, compared with an increase of 60 per cent and 70 per cent in Egypt and the Sudan.

241 433 Both 1951 and 1952 were bad years for olives; in the north, thousands of trees have been blighted by frost. Syria produces good fruit, especially in the oasis of Damascus, and peaches, apples, figs, plums, pears, grapes, apricots, and pistachio nuts are all grown. The most prolific vegetable crops are lentils, beans, and peas. The area under rice has been reduced by drainage schemes and Syria does not grow enough for her own needs. The famous tobacco of Latakia is grown under a monopoly which has recently been transferred from the concessionary company to the state. Silk and hemp are also cultivated and a start has been made in growing beet for the Homs sugar refinery.

231 439 234 Nearly 3 million sheep are estimated to graze in Syria with goats numbering over a million. Over 7,000 tons a year of coarse wool are exported, including about 2,000 tons a year suitable for rug-making. Cattle are of two types and, in 1950, numbered about 429,000.[1] Yoghurt and cheese and milk are consumed within the country. It is estimated that there are still over 72,000 camels in Syria and they are an important part of nomad economy. The Syrian horse and mule are still bred but in declining numbers.

185 The forests of Syria, as of the Mediterranean in general, are a survival from a period of greater rainfall coeval with the last glacial period of northern Europe. The woodcutter and the goat, war and erosion have taken their toll and trees are no longer an important part of Syrian wealth. An effort at re-afforestation is being made, and there is also a project to produce reeds for paper-making on the banks of the Euphrates.

Industry and Commerce[2]

377 In 1951 the output of electric energy was over 86 million kilowatt hours used mostly in Aleppo and Damascus. New

---

[1] *Statistical Abstract of Syria, 1951–2* (Damascus, 1952).

[2] For further details, see UN, Dept. of Economic Affairs, *Review of Economic Conditions in the Middle East, 1951–2.*

3eRoyal Institute of International Affairs U-4 (no date)1954 MI Middle East

LEBANON MEI
SYRIA MDI

L
S
241
433

MAIN CROPS

	Area (000 hectares)		*Production* (000 metric tons)		*Yields* (100 kg. per ha.)
	1951	*1952*	*1951*	*1952*	*1950*
Wheat	61	70	43	50	7·5
Barley	15	20	14	27	11·2
Cotton	5	2	1	..	..
Tobacco	..	..	3	2	..
Citrus fruit	..	..	75	90	..
Grapes	21	..	80	..	..

.. = not available.

(SOURCES: Banque de Syrie et du Liban, *Exercice 1952* (Paris 1953); except figures for yields, cotton production, and area and production of grapes, all of which have been taken from FAO, *Yearbook of Food and Agricultural Statistics*, 1952.)

312 241 439 There is enough water for land to be used more intensively than in Syria but there is not enough room to grow all that the country needs. Improved methods have increased the yield of cereals per acre, but Lebanon will always have to import wheat. The crop of grapes is nearly double the weight of the wheat harvest and Lebanon exports grapes, wine, and the best quality araq. The citrus exports are high but the growers have not yet established the same name for quality as have the Israelis. Melons, water-melons, apples, onions, and potatoes are also important crops and vegetables are exported as far as the oil towns of Kuwait and Dahran. Cotton and tobacco are also grown in small quantities.

423 369 The land is more evenly parcelled out amongst the people in Lebanon than in Syria but, despite the fact that there are many small holdings, there is a general shift from country to town, and Beirut and its immediate neighbourhood hold nearly half of the population. In the coastal regions of intensive cultivation small holdings predominate, while in the plain regions large estates worked by share-croppers are the most prevalent form of land tenure. Some estates owned by rich men are farmed under modern methods and equipment and there is less room for improvement or for expansion in agriculture than in Syria.

Industry

433 Relative to its size, Lebanon is one of the most industrialized countries in the Middle East area. It is probable that nearly 50,000 persons are so employed, of whom over half are factory workers. However, Lebanese industry has only partly recovered from the loss of the Syrian market and some industries had either to move to Syria or to curtail production. The biggest industries are electricity, which produced 130 million kwh. in 1951, and the Chekka cement factory south of Tripoli, which produced 303,000 tons of cement in 1951. Cotton weaving and

25: Warriner S-5 (no date) 1948 MI Middle East

Lebanon ME1
Syria MD1

Chapter VI

SYRIA AND LEBANON

LAND AND POPULATION

S
241 AT first sight, the main crop of Syria appears to be thistles, and so it is in fact: about half the land is under fallow every year, and the cultivated land is cropped only one year in two
S or even three. There are some districts with intensive cultiva-
[3/2] tion, for instance, the oasis of Damascus, with its brilliant green crops irrigated by 'Abana and Pharphar'; but most of Syria is cultivated very extensively indeed.

S
3/1 In Syria and Lebanon together the area cultivated before the late war was some 5·8 million acres, but of this total only
243 3,900,000 acres were cropped each year, the remainder being
L
3/1 fallow. The greater part of the cropped area was under cereals,
243 about two-thirds being under wheat and one-third under barley.

L
3/1 In Lebanon, the whole of the cultivated area is cropped, and there is no uncultivated land which could be brought into cultivation. In Syria however there are large areas of cultivable land which are not at present cultivated, the total cultivable area
S being some 12½ million acres, of which only about one-third is
3/1 under cultivation. Unfortunately this figure is only a rough estimate, and it is not clear how much of the area is cultivable under present conditions, or how much of it is marginal desert grazing. Some of it is undoubtedly cultivable under present conditions, and there is certainly no shortage of land in Syria.

SYRIA: AGRICULTURAL LAND, 1943[1]

Province	*Cultivable*	*Cultivated* (including fallow)
	Acres	*Acres*
Jezira	2,471,000	54[illegible],600
Euphrates	3,212,000	321,200
Aleppo	3,706,000	1,260,000
Homs	420,000	345,900
Hama	1,309,000	1,210,000
Damascus	1,062,000	345,900
Hauran	518,600	518,900
TOTAL	12,698,600	4,545,500

---

[1] Omitting the provinces of Latakia and Jebel ed Druz for which no figures are available; their cultivated area may be estimated at about half a million acres.

25: Warriner S-5 (no date) 1948 MI Middle East
Lebanon ME1
Syria MD1

S During the recent war there was an expansion of cultivation
811 in Syria as a result of high prices and mechanization. The previous table shows the cultivable and cultivated land in different provinces and the distribution of these areas in 1943.

S Little is known about the rate of population growth, but it is
L believed to be rapid. According to the most recent estimates the
161 total in 1944 was 3,987,012, of which the population of Syria was 2,860,411 and of the Lebanon 1,126,600. The population of
S Syria was divided as follows:
162

SYRIA: POPULATION AT END OF 1943

Province	*Total*
Latakia	452,507
Aleppo	870,139
Hama	157,458
Homs	212,424
Hauran	112,842
Damascus	603,889
Euphrates	225,023
Jezira	146,001
Jebel ed Druz	80,128
TOTAL	2,860,411

(This estimate excludes the Beduin, whose number is estimated at 400,000.)

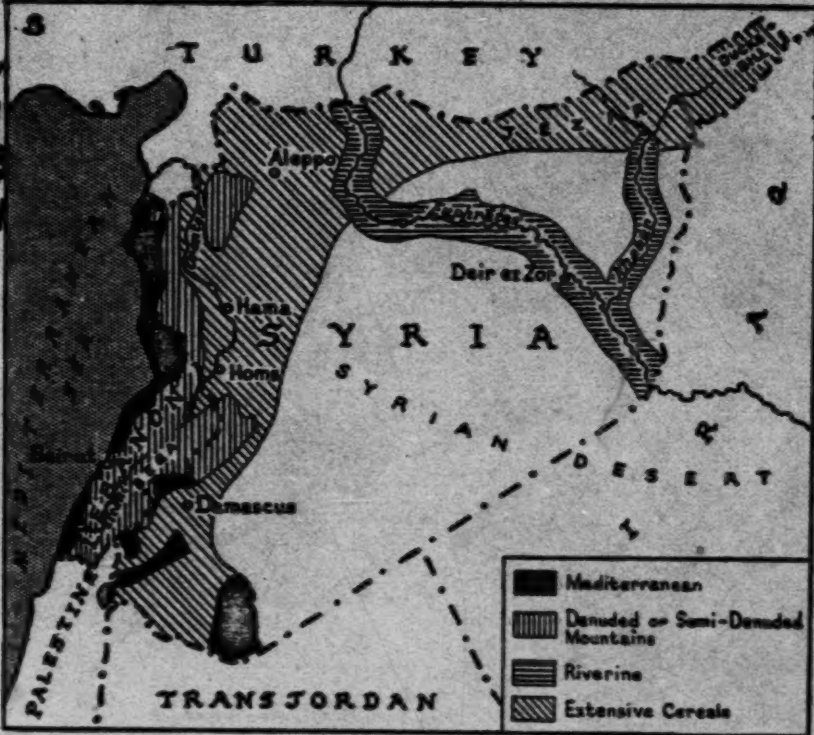
About three-quarters of this total, or about 2·1 million, are
S rural. The amount of cultivated land per head is 2¾ acres, but
311 because cultivation is so extensive the area actually cropped is only some 1½ acres.

L Lebanon, by contrast with the dry plains of Syria, is inten-
811 sively cultivated because of the high rainfall on the coast line;
241 yields per acre are higher, and crops are more diversified, including citrus, olives, bananas; small irrigation schemes have
489 been developed along the coast on the streams from the Moun-
162 tain. The Lebanon depends for part of its grain supply on Syria, and all the cultivated land is cropped. The cultivated area in 1943 amounted to 1·3 million acres. The total population in 1944 was estimated to be 1,126,600; of this probably about 750,000 are rural, and the amount of cultivated land is about 1¾ acres per head.

S+L
241 Grain production in Syria and Lebanon together before 1939 averaged 800,000 tons and rose to about 1 million tons during the recent war.

25: Warriner S-5 no date 1948 MI Middle East
Lebanon ME1
Syria MD1

S
L
311
132
● 241


S
TURKEY
Aleppo
Euphrates
JEZIRA
Deir ez Zor
Tigris
Hama
SYRIA
Homs
SYRIAN DESERT
IRAQ
Beirut
LEBANON
Damascus
MEDITERRANEAN
PALESTINE
TRANSJORDAN
Mediterranean
Denuded or Semi-Denuded Mountains
Riverine
Extensive Cereals

SYRIA AND LEBANON: AGRICULTURAL AREAS

S
L
243

GRAIN PRODUCTION IN SYRIA AND LEBANON, 1934–43

	Tons	Cwts per acre
Wheat		
1934	443,000	6·3
1935	504,000	7·5
1936	427,000	6·3
1937	468,800	6·6
1938	644,300	9·0
1943	624,280	7·3
Barley		
1934	292,100	7·8
1935	347,100	9·5
1936	308,100	8·2
1937	266,300	6·5
1938	383,400	9·0
1943	330,485	8·2

S
241
311

With a total rural population of about 2·8 million in 1943–4, the production of grain per head amounts to only 3·4 quintals or 6·4 hundredweights. Thus the problem for Syria is to in-

Lebanon ME1

Syria MD1

S

241 increase the productivity per acre and also to expand the cultivated area per head. 311

L

In the Lebanon, however, with its steep hillsides under intensive cultivation, there is a definite pressure on land resources. 311 The limits of intensification appear to have been reached, and a 241 large part of the village population supplements its income by 434 work in the towns, and by remittances from abroad. If the land L tenure system in Syria were less oppressive, room might be S found on the land for settlers from the Lebanon, but as things 311 are, the standard of living and status of the Lebanese peasant is higher; compared with the Syrian peasant he is a free man, and 167 there is no inducement to leave the Mountain for the under-populated plains of central or northern Syria.

LAND TENURE

L

Corresponding to these different methods of farming, there 471 are different systems of land tenure.[1] In Lebanon individual small ownership is well established, and the pattern of village 423 life, with its broad class of small peasant owners, few large 464 farmers, and a growing class of landless labourers, resembles that of Europe.

S

In Syria, the greater part of the land is owned by city notables—the ruling class—and cultivated by small share-tenants. 471 Though individual ownership exists in some districts, for instance 427 the Beqa Valley and the oasis of Damascus, the most usual 428 form of landownership in the plain districts of Syria is share-tenancy. The villagers bring their corn to the village threshing floor, and when the grain is threshed the landlord or his agent stands by and takes one-half of the grain. Towards this result he has contributed nothing; all labour, equipment, seeds, livestock, have been supplied by the tenant, so that his share is rent purely for the use of the land. The landlord is almost always an absentee, a city notable who only visits the land to collect rent.

S

The share taken by the landlord varies from district to district, and also varies with the condition of the land. According 427 to an inquiry made by the French authorities, the usual division of the crop for non-irrigated cereals is 40–50 per cent to the

---

[1] The information which follows is mainly based on A. Latron, *La Vie rurale en Syrie et au Liban* (Beirut, L'Institut Français de Damas, 1936). The brilliant and profound study by Jacques Weulersse, *Paysans de Syrie et du Proche-Orient*, is an indispensable authority which unfortunately was received only after going to press.

25e Warriner S-5 no date 1948 MI Middle East
Lebanon ME1
Syria MD1

S L probably few, of the estates are the properties of old, wealthy
families of Ottoman times, which still exist in Lebanon, such
471/as the lands belonging to the families of Arslan, Jumblatt,
Chehab, Khazen, but many of these have been broken up by
S the Moslem laws of inheritance. Other estates have originated
L from direct grants made by Turkish Sultans to influential poli-
471 ticians, as for example the two very large estates in the Beqa
and the Litani valley. Others too were formed at the time of
425 the general registration of property undertaken by the Otto-
423 man Government when chiefs of tribes or villages registered
tribal land in their names as their private property. Uncertainty
about legal title to land gives the educated classes frequent
opportunity for ousting peasant owners, and whole villages
have come into the possession of rival groups of city notables,
as a result of litigation among the villagers who have sought
their assistance in establishing their title.

S While the land-tenure system is thus a result of peasant
735 poverty, it also perpetuates poverty by standing in the way of
any long-term investment. The high percentage of fallow in
•241 Syria suggests a great waste of land resources, and there could
427 certainly be some improvement in yields, even in dry land
L farming, if green crops were introduced more generally into the
735 rotation. But the share-cropper has little incentive to improve
241 the fertility of the land, since he has no certainty of tenure, and
427 since the landlord will take 50 per cent of any increase. Since
the landlords are not as a rule directly interested in farming,
they do not themselves undertake long-term improvements in
the land.

Three case studies illustrate the ways in which the land-tenure system hinders advance.[1]

S One study relates to the large estate of Misherfe, near Homs
241 in central Syria. This is 24,000 acres in extent and includes five
villages, with 2,500 inhabitants. It is very extensively cultivated,
only one-third of the area, 8,000 acres, being cropped each
year. The land is divided into three parts, one with wheat, bar-
ley or *qatani* (mixed grain), one ploughed but not sown, and
S one left fallow. A small area, 200 acres only, is irrigated, though
8/2 water supplies are sufficient to irrigate much larger areas.

---

[1] These studies, which were prepared for the M.E.S.C., are not at present available in print.

LAND TENURE

● 241 Wheat yields are lower than the average for Syria, averaging 4 hundredweight to the acre.

Almost the whole of the estate is let to share-tenants who are 427 supervised by an agent, the landowners themselves rarely visiting the estate. The share of the crop taken by the landlord is 25 per cent on non-irrigated land and 42½ per cent on irrigated land. These shares are more favourable to the tenant than is usual, because it is desired to attract more labour to the estate which sixty years ago was quite uncultivated. As elsewhere, the tenants have no leases but live in fear of eviction.

The tenants are divided into five classes:[1]

1. Large tenants cultivating 6 feddans (225 acres) of non-irrigated land: 4 in number.
2. Medium sized tenants cultivating 4½ feddans (168¾ acres): 4 in number.
3. Small tenants cultivating 3 feddans (112½ acres): 60 in number.
4. Small tenants cultivating irrigated land and with an average area of 18 acres: 100 in number.
5. [464] Wage labourers, who form the majority of the villagers.

484 454 511 Of these classes, only the small groups of large and medium-sized tenants can live well, in the sense that the output of the farm suffices to cover the essential needs of the family and also provides a small cash surplus. The surplus is used to buy gold pounds and jewellery. But the other groups cannot achieve even a sufficient standard of food consumption. The standard consumption of wheat (barley in the case of the very poor peasants) is 14 kilogrammes of grain per month; to achieve this level it is necessary to crop about 45 acres. Thus with the present system of cultivation, the class of small tenants, who cultivate an area of 112 acres and would appear to have quite sufficient land, cannot attain the minimum because only one-third, 35 acres, can be cultivated owing to shortage of live-stock.

511 [342] These small tenants, who are typical of the farmers in the great plains of Syria, are very poor, living in one- or two-roomed mud huts, and when there is only one room, sharing it with their animals.

---

[1] It must be said that the feddan in Syria is a variable measure and here is equivalent to 37½ acres.

Syria MD1

511 their animals. Malaria is prevalent. The majority are heavily
[164 indebted. The tenants on the irrigated land, with an average
holding of 18 acres, are also poor but less heavily indebted, because
they can depend on a more regular income.

484 The poorest class are the landless labourers whose income in
464 money and kind amounts to 530 Syrian pounds a year (1944)
(£10 at 1939 prices).[1] This is a starvation wage, which means
262 that they can only eat enough in harvest time, and in winter must
subsist on maize, bread, and grass.

311 The poverty on this estate is therefore a result of the low
productivity and the low proportion of the area under cultivation.
● 241 One way of increasing the area cultivated would be by
409 the use of machinery. Tractors were introduced some fifteen
years ago, but proved too costly in relation to the low prices of
Syrian grain; owing to lack of skilled drivers and proper maintenance
they fell into disrepair. During the late war, however, as
the price of grain rose, tractors were again used by some tenants
who hired them from neighbouring estates.

312 Another way of raising production would be to increase irrigation
since there is sufficient water to supply much more land.
In this respect the estate is typical of the whole Homs–Hama
plain, where much of the water which the French authorities
have made available by irrigation goes to waste.

311 On this estate, therefore, the poverty of the cultivators is due
871 to the landowner's failure to increase the productivity of the
744 soil, rather than to his exploitation of the peasants; compared
with other estates, this one is socially progressive, since the
landowner's family have set up a school and also distribute
medicines free of charge.

The second study covers a more intensively cultivated village,
312 Ashrafie on the borders of the irrigated district of Damascus.
471 Less heavily supplied with water than El Ghuta itself, Ashrafie
has sufficient water to irrigate 10 per cent of the total land. The
427 total area is 1,600 hectares or 4,000 acres, of which 2,400 are
owned by four estate owners and the rest by peasants. The
largest landowner is an absentee, letting his land on a 50 per cent
share-tenancy basis, with definite three-year leases (by contrast
with the usual custom under which the tenant has no lease).

---

[1] This is calculated on a rate of 9 Syrian pounds to £1, allowing for a six-fold increase in the Syrian cost of living between 1939 and 1944.

1 [The estate of Misherfe, near Homs --Analyst]

25: Warriner S-5 (no date) 1948 MI Middle East

Lebanon ME1
Syria MD1

LAND TENURE

S 471 Of the total 160 families in the[1] village, 100 own some land and 60 own no land. The peasant owners are divided as follows

1. Rich farmers, owning about 10 hectares ..	5	families
2. Medium farmers, owning from 3 to 8 hectares	80	"
3. Poor farmers, owning between 1 and 3 hectares	15	"
4. Share-tenants	10	"
5. Labourers	50	"

S 241 As in Misherfe, two-thirds of the land is uncropped each year. The peasant divides the land into three plots, one sown with a crop, one ploughed but not sown, and one fallow. The wheat yield is slightly higher than the average for Syria, and amounts to 833 kilogrammes per hectare (6½ hundredweight per acre); barley yields are also slightly higher, being 8 hundredweight to the acre.

S 571 262 As a result of the more equal distribution of land, rather better yields, and more irrigation, the standard of living is better than in Misherfe. The first two classes, including half the families, can reach an adequate standard of consumption of food and other essentials, which is reckoned to be 25 kilogrammes of wheat per month, 1 kilogramme of meat per month (i.e. one sheep a year), 40 kilogrammes of olive oil and 20 kilogrammes of 'samn' per year, 4 tins of kerosene and a small quantity of clothing. The remainder of the village, about one-half of the total, that is the poor peasants, labourers, and share-tenants, are unable to reach this standard and live in great poverty, in one-roomed huts. S 426 The majority of these cultivators are heavily indebted, and the burden of indebtedness has doubled during the war years, because debts are usually incurred in gold.

L 471 The third study relates to Kfer Sa'ab in the north Lebanon, a hill village of small owner-cultivators. Of the total area of 200 hectares, about 30 are owned by the sheikh of the village. The total number of families is 150 (1,200 people), of which 120 own land and 30 are landless. A few peasant owners are rich with 5 hectares of land; 60 are medium owners with 1·5 to 2·5 L 245 [3/2] hectares of land, and 25 own 0·5 to 1·5. Here cultivation is much more intensive than in Syria, and half the land is irrigated.

8 80

[1] [Ashrafie, near Damascus -- Analyst]

L irrigated. The whole of the land is cultivated every year, the
241 rotation being wheat followed by potatoes, the potato crop being irrigated. The wheat yield is below the average for Syria, amounting to 6 hundredweight per acre, and the potato yield is 5 hundredweight per acre.

L However, in spite of the greater intensity of cultivation, the
511 shortage of land means that the majority of the peasants are not able to attain an adequate standard of living, measured in terms of a few essential commodities: 20 kilogrammes of wheat and 4 kilogrammes of meat per head per month, 100 kilogrammes of olive oil per annum, and 5 tins of kerosene. To attain this standard a family must own 3 hectares of land, and as only the rich peasants and a few of the medium peasants own so much, the majority of the medium peasants and the poor landless peasants do not achieve it. L 434 The majority of these supplement their income by remittances from their emigrant relations abroad. Those who have no income from abroad leave the village to work as unskilled workers or servants in the towns.

L 511 342 556 In[1] this village, therefore, the cause of poverty is the shortage of land, since the land is much more equally distributed than in Syria and the system fairly intensive. Living conditions are far better than in Syria: the majority inhabit stone houses with two or more rooms. The richer peasants are also more sophisticated than those of Syria, preferring to gamble their money away in the neighbouring summer resorts rather than spend it on jewellery.

S L 434 241 From these three studies three conclusions emerge. The first is that a higher income per acre depends on irrigation, since the net income from irrigated land is two or three times as high as from non-irrigated land.

INCOME PER HECTARE ON IRRIGATED AND NON-IRRIGATED LAND (in Syrian Pounds)

	Ashrafie		*Misherfe*		*Kfer Sa'ab*
	Non-Irrigated	*Irrigated*	*Non-Irrigated*	*Irrigated*	*Half-Irrigated*
Gross Income ..	352	887	218	633	879
Costs	118	247	75	96	246
Rent	—	—	59	304	—
Net Income ..	234	640	84	233	633

[1] [Kfer Sa'ab in the north Lebanon -- Analyst]

25: Warriner S-5 (no date) 1948 MI Middle East
Lebanon ME1
Syria MD1

S the land. In 1926–31, 182 villages comprising 181,000 hectares
166 were colonized in small properties by 6,000 families. The Government of Latakia compelled large proprietors in the region of Homs to give up their villages in the district of Masyaf in 1929; the land was distributed among the occupying peasants and sold to them at a price to be paid for in ten annual instalments. The village of Jib Ramle was also settled in 1929, in part by occupying peasants, in part by refugee Armenians.

But the French administration did not complete the settlement of these areas. In some regions the Turks settled these lands with nomad tribes, who were themselves averse to cultivation and either rented the land to Alawi villagers or continued to live themselves as nomads on the land without cultivating
S much of it. Consequently this land is now very sparsely settled.
811 Round Homs there are said to be 2,000 to 4,000 hectares with only 10 per cent of the land cultivated: this is some of the most fertile and best situated land in the country, and could be developed by colonization schemes.

S In several respects the French authorities have modified the
L Turkish system in ways which strengthen the landowners
656 against the cultivators. One of these was the sale of the extensive
423 *Waqf* properties to business enterprises, irrigation concessions,
565 or landowners. Another was the abrogation of the right of ownership acquired by ten years cultivation which benefited the small cultivators in enabling them to acquire new land.

S Efforts were made to start co-operative and agricultural
L credit banks, but these never succeeded in breaking the peasant's
185 indebtedness. Several large-scale irrigation schemes were
565 started, but produced more water than could be used. The educational
511 system did not extend to the villages. Within the framework of the existing system, these reforms did little to raise the standard of the peasants. As a mandatory Power the French relied on the collaboration of the wealthy upper class, that is, on the landowners, and so could make no fundamental reforms in the land system.

POSSIBILITIES OF DEVELOPMENT

S So far as dry land farming is concerned the possibilities of
L improvement are hampered by the dry summer, which necessitates
● 241 a long period of fallow. However, it would be possible by

25: Warriner S-5 (no date 1948 MI Middle East

lebanon ME I
Syria MD1

S better cultivation, if more machinery were available, to reduce
L the fallow to one year out of two, instead of two out of three
241 in the districts where this is customary; it would also be possible, by machine cultivation, to keep weeds under control. (See Chapter VIII.)

S The main possibilities of development, however, depend on
312 irrigation. At present an area of some 500,000 acres is irrigated, and even under the existing scheme much water is wasted. How
L much additional land could be irrigated is a subject for contro-
312 versy. Mr Soubhi Mazloum, a Syrian irrigation engineer, suggests that the total area which could be irrigated, including the use of the Euphrates water, may be as large as 1,200,000 hectares (2,960,000 acres):[1] but this figure refers to the area which it is *physically* possible to irrigate, not the area which could be irrigated with any prospect of economic return.

A more exact and detailed estimate was prepared by Professor Addison, the irrigation expert, who surveyed existing schemes in 1943 and considered that the extension of these which was then economically practicable would irrigate some 68,000 hectares (168,000 acres) in addition to the area already irrigated.

S The difference between these two estimates indicates how
654 wide a range of opinion there is. A survey is now being prepared by a British irrigation firm on behalf of the Syrian Government, to provide the basis of development projects, and pending its publication it is impossible to quote any more satisfactory estimates.

S *The Jezira and Euphrates Provinces.* In inner Syria, the Jezira
311 area and part of the Euphrates province in the north-eastern corner of the country, there are quite large possibilities of ex-
312 tending cultivation both in the rain-fed zone, and by irrigation.
132 North of a line from Tiyne to Sheikh Saleh there is sufficient rainfall to water the winter crops. In the 'Duck's Bill' and along the Turkish frontier to a depth of about 12 miles to Derbisiye, the rainfall is 50 to 100 centimetres per year (20–40 inches), and south of this there is another belt with rainfall of 25 to 50 centimetres (10–20 inches), about 50 miles wide.[2]

---

[1] 'Le Problème de l'Eau au Liban et en Syrie', in *L'Agriculture, Richesse Nationale*, (Beirut, 1942).

[2] This information is based on an unpublished report prepared for M.E.S.C. in 1944.

POSSIBILITIES OF DEVELOPMENT

Both in the Jezira and in the Euphrates region there is
scope for widening the area cultivated and raising the yields, as the soil
241 is fertile. In the Jezira the use of machinery could be extended—
231 it is already increasing fast. Better livestock production could be
137 achieved by greater use of fodder crops for which conditions are
favourable: in the 'Duck's Bill' good clover grows wild. At present fodder crops are not considered worth cultivating.

312 In the Euphrates region there is great scope for extension of
irrigation. But a large scale scheme would be costly because the
river runs between high escarpments, which vary in distance
between each other up to about 10 miles. To irrigate much
larger areas it would be necessary to lift water over the escarp-
311 ments. There are large areas of uncultivated land, particularly
312 between Abu Kemal and Deir-ez-Zor. Even on the land already
cultivated yields of wheat could be much higher: at present the
243 yield is four to six times the seeding rate, and, according to local
farmers, could be raised to ten to fifteen times the seed with
[435] better irrigation. The high cost of fuel oil is the limiting factor
as it also is for tractor work. On the Khabur river improvement of the ancient barrages would permit an extension of irrigation.

000 It is in this area that there is real scope for a planned settlement of cultivators, with improved methods and a better system of land tenure. The obvious form for such settlement to take would be on the model of the Jewish co-operative farms, small holdings with collective use of machinery and working to a cropping plan; on the uncultivated land such settlement could be undertaken without incurring high capital costs.

So far as the Euphrates Valley is concerned, similar co-operatives based on communal control of water supplies might be started on a small scale. Large-scale irrigation here would be costly, and would necessarily have to be co-ordinated with the irrigation of Iraq. An immediate step needed is to reduce the price of fuel oil.

While it is easy on paper to see the possibilities of such schemes as these, it is not easy to see where in fact the motive power for them is to come from. They will not bring in quick big returns, which are what local farmers and landowners want; the district is remote and the main object of such investment would be a long period rise in the standard of living, in which the moneyed classes are not interested. Present-day Syria is not

29:Dunn S-4 (1952)1952 MI Middle East

Syria MDI

COTTON IN SYRIA

Cotton in the past two years has become Syria's most important export. The country also exports wheat, barley, and other cereals, apricot paste, olive oil, wool, some cotton textiles, licorice root, tobacco, pistachio nuts, and livestock products. 241 439

Many types of manufactured articles are imported—petroleum products, minerals, pharmaceuticals, electric appliances, motor vehicles, machinery, tires, tubes, glassware, and hardware. 439

Table 20

SYRIA: Specified Exports as Per Cent of Total Exports
March 12 through December 31, 1950
Value

Item	1950
	Per Cent
Cotton	28.4
Wool and Hair	11.1
Silk, Artificial Silk, and Textile Fibers	6.0
Vegetables and Products	37.5
Animals and Products	4.0
Tobacco	1.3
Hides and Skins	1.1
Others	8.4
Total	100.0
Total Value Converted to Millions of Dollars	59

SOURCE: United States Department of Commerce.

Table 21

SYRIA: Exports to Specified Countries as Per Cent of Total Exports
1951
Value

Country	1951
	Per Cent
Lebanon	21.5
France	18.2
United States	13.5
Lebanon Free Zone	8.2
Iraq	7.3
United Kingdom	7.0
Others	24.3
Total	100.0
Total Value Converted to Millions of Dollars	79

SOURCE: United States Department of Commerce.

PRODUCTION

Syria is essentially an agricultural country. Its mineral resources have been exploited only slightly despite indications of the existence of phosphate, lead, copper, antimony, nickel, chrome, and gypsum. Manganese ore has been 316

29:Dunn S-4 (1952)1952 MI Middle East
Syria MDI

651 30 per cent; and on garments, from 40 to 50 per cent. Syria, along with many Middle Eastern countries, has retained a war-time regulation assessing double duty on goods from Japan, a former enemy.

AGRICULTURE

311
244
Accurate figures on the present land use or possible uses are lacking. Government estimates on the area under cultivation and acreage are considered unreliable by the United States Agricultural Attache, and he suggests using them only as general indications of trends.

These rough calculations indicate that about 45 per cent of the country—approximately 20 million acres—is suitable for agricultural purposes, including grasslands. The rest is waste land. About half of the 20 million acres are thought to be suitable for cultivation, out of which between 4 and 5 million acres are estimated to be in crops and orchards at the present time.

At least three-fourths of the crop land appears to be devoted to cereals, primarily wheat and barley. Cotton has been expanded in recent years to about 10 per cent of the planted land. Dry legumes, vegetables and other minor food crops, as well as several less important industrial crops such as tobacco, hemp, and silk cocoons, are also produced.

Orchards and vineyards are significant in Syrian agriculture; and, although they have not been fully developed, occupy possibly 10 per cent of the cultivated land. Olives, citrus, walnuts, and pistachios are commonly grown.

Because of the lack of moisture, inadequate rotation, and insufficient use of fertilizer, a large part of the cultivated land is fallowed each year. A

—Photo Courtesy of Near East Foundation

Near East Foundation officials inspect one of their experimental cotton fields near Damascus which produced over a bale and a half to the acre.

29:Dunn S-4 (1952)1952 Ml Middle East
Syria MDl

COTTON IN SYRIA

United States mission estimated that 50 per cent of the land was in fallow 311
during 1948.[31] Increased irrigation and high prices for agricultural com- 241
modities have reduced significantly the fallow in the past few years, and the
percentage may be less now.

PRODUCTION

Syria is normally self-sufficient in most foods. In fact, the country 433
exports fresh and dried fruits, lentils and other legumes, tobacco, wool, butter,
hides, and meat. Occasional poor harvests make it necessary to import food
grains.

The greatest deficiency is in rice, which has been displaced by cotton in recent years to such an extent that almost all of the country's requirements must be imported. Last year's bad cotton crop may prompt farmers to revert to rice and, if so, this will reduce the deficiency.

Government figures indicate that production of food has not kept pace 433
with the expansion in population and that the per capita food supply and 146
individual calorie intake are both declining.[32] These conclusions are based on
highly conjectural statistics and are in conflict with opinions of the United
States Agricultural Attache and Syrian officials who are intimately ac-
quainted with the country's agricultural problems. These observers believe
there has been no real decline in food consumption, except possibly for short
periods of time. Certainly there is no shortage now, and the bumper cereal
crop in 1952 should enable the country to fill domestic needs and export at
least 30 per cent of its wheat and possibly 50 per cent of its barley.

The daily diet consists largely of starches, it is true, but this is due more 262
to habit than anything else. The resources of the country are ample to permit
a much more balanced diet.

PRODUCTIVITY

Syrian agriculture often is characterized by the low productivity of the 461
agricultural worker. It is obvious that a great many more people are used on 241
each acre of land than is necessary. The low agricultural income is reflected 511
in the obvious poverty of the people. Yet, comparisons with other countries,
and even detailed calculations, are of questionable value due to the unreliability
of the statistics.

Government reports on average yields also are open to question. Official 241
figures show that wheat yields have dropped sharply, while cotton yields have
tended upward, except for the extremely bad year in 1951-52. They also show
very wide fluctuation. Experienced observers point out that the yields are
especially questionable because both acreage and production figures are not
reliable. On the basis of conversations with producers in various sections, it
is apparent that yields are normally fairly high and that they fluctuate,
depending on water availability and on insect devastation.

POTENTIALITIES

A number of missions which have studied the possibilities of agricultural development in Syria, especially in the last five or six years, all mention the

---

[31] *Activities of FAO, 1950-52*, Food and Agriculture Organization of the United Nations, 1952, p. 58.

[32] *Development of Food and Agricultural Resources in the Near East*, Food and Agriculture Organization of the United Nations, Rome, November, 1951.

29:Dunn S-4 (1952)1952 MI Middle East
Syria MDI

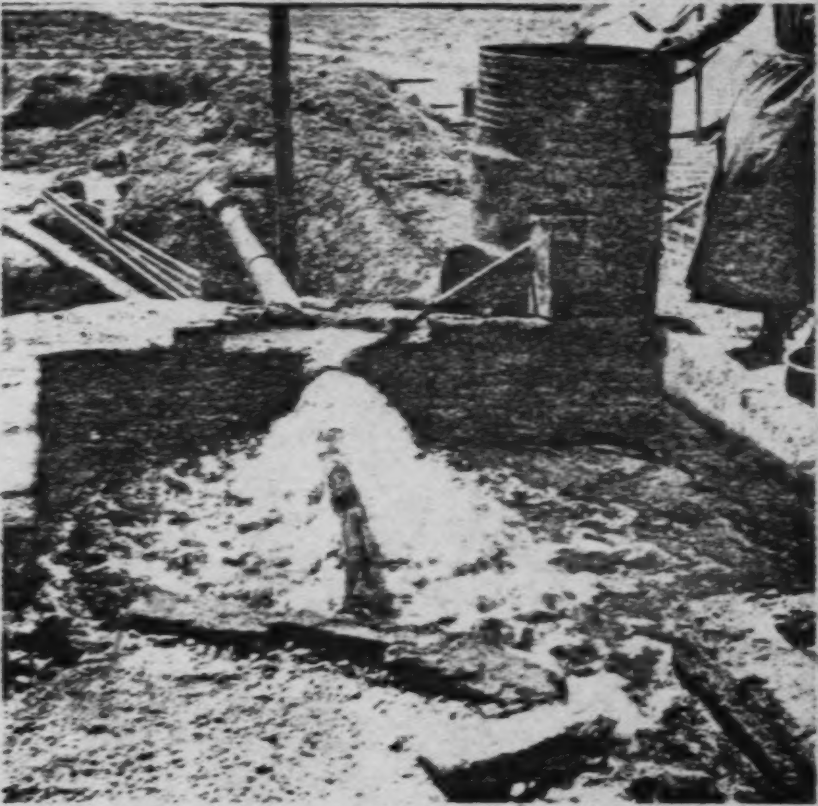
● 241 possibilities for expanding the total area under cultivation, for improving and increasing irrigation, and for increasing productivity through research and education. They also point to needed improvements in agricultural equipment, in agricultural credit, and in the land tenure system.

241 311 Although estimates vary as to the amount of new land which can be brought into cultivation, all agree that it is possible to double the present planted acreage. Cultivation could be extended in some dry-land areas with improved rotation and fertilization, but in most cases new land can be brought into cultivation only by extending irrigation.

IRRIGATION

241 312 Information which the United States Legation at Damascus has prepared from reports of the Syrian Ministry of Public Works indicates a total of about 2.4 million acres under irrigation at the present time, of which approximately 60 per cent is from gravity flow and the remainder from pumps of various sorts. Some of the Ministry's data are said to be based on actual surveys, some on interviews, and some simply on estimates. This 2.4 million

241
312
406



The most common system of irrigation in the new cotton areas of the Jezira is to draw water like this from streams with pumps powered by diesel engines. The number of pumps in Syria has doubled since 1950.

29:Dunn S-4 (1952)1952 Ml Middle East
Syria MDI

COTTON IN SYRIA

is a very high figure, representing more than 50 per cent of the total land 241 under cultivation, and the United States Agricultural Attache is inclined to 312 believe that the Ministry's figures include the total area served by irrigation systems, whether or not all the land receives water each year.

There are no large-scale irrigation works in Syria. State and local 312 governments have constructed and now maintain a number of small dams, diversions, and canals, but the total area served by these public works in 1951 653 was only 100,000 acres. Several other projects, scheduled for completion within the next three or four years, will increase the area under public works another 100,000 acres. Most of these projects are being financed by the federal government out of its regular budget.

By far the largest area is served by small diversions operated by individuals. 312 The next largest and fastest growing area under irrigation is that served by mechanical pumps. The number of pumps doubled from 1950 to 1951 and the area irrigated increased three times. These pumps are used mostly for drawing water from streams.

In the absence of detailed surveys, accurate estimates as to how much water might be available from all sources are impossible to obtain. Draining the Ghab Swamps on the Orontes River west of Aleppo to bring another 100,000 acres into cultivation is now being studied by a Dutch engineering firm, and a large dam on the Euphrates River to impound water in sufficient volume to serve an additional 750,000 acres is under consideration. Several million acres of land along the Euphrates River probably are suitable for cultivation from the standpoint of soil if water becomes available. At the present time irrigation along the Euphrates is limited to the low-lying land between the banks of the river. Through the centuries the river has cut a bed from a half mile to as much as 10 miles wide through the plain, which is now 30 to 50 feet above the water level. It has proved too expensive for individuals to use pumps to pull the water from the river for irrigation.

The same general condition prevails on the main tributary of the Euphrates, the Kabur. Numerous pumps have been installed along the Kabur, and a gravity system in the north, operated by a small dam and canals, is being extended under a current program. It is possible the water would be adequate to extend the gravity system slightly in the southern reaches of the river.

Water might be diverted also from the Tigris River which runs across the northeastern border of Syria. Extensive use of water from any of these international rivers, however, very likely would involve agreements with neighboring countries. Additional water might be provided also by the other rivers in the country. All of these proposals involve tremendously expensive projects beyond the means of the country to finance without outside help.

CAPITAL AND CREDIT

The highly nationalistic attitude of the Syrians damages the chances of 471 private industry's securing a foreign loan. A recent law requiring all foreign operations to have Syrian managers and at least 50 per cent Syrian capital, 186 together with the questionable security, makes sizable foreign investments 648 unlikely. Under these conditions any foreign loans probably will be made to the government. The Syrian Government has made an obvious point of not obligating itself to another foreign power, and it is unlikely it will accept

Syria MDI

COTTON IN THE MIDDLE EAST

471 a loan directly from another government. This attitude is illustrated clearly in the refusal of Syria to sign an agreement with Point Four.

186 648 A loan from an international body is another matter, and the country is seeking a loan of several million dollars from the International Bank for development of transportation, particularly roads in the Jezira, and port facilities at Latakia.

454 241 Without a large-scale public works program, only minor improvements can be made to the existing system. However, opportunities exist for increasing production through private investment.

The good crops of 1950, sold at exceptionally high prices, resulted in high profits and the accumulation of considerable capital. The hope of continued high profits caused much of this capital to be re-invested in equipment and farm improvements. The same incentive also brought out new capital which never before had been invested in agriculture. Judging from the number of tractors, combines and accessories, and irrigation pumps purchased during 1950 and 1951, the investment in agricultural equipment in these two years exceeded the total up to that time. Unprecedented expenditures for general farm improvements also were made, an exceptional step in a country without a history of investment in agricultural development beyond the acquisition of land and a few simple facilities. The capital base has been small. Production has about equaled consumption. There has been little surplus for savings. The few families with capital have used their funds in other ways, seldom for agriculture. But the experience of 1951 was not encouraging for long-continued investment in agricultural development. These investments were costly, many farmers paying double the United States prices for equip-

361
427
241

These farmers are typical of those in northern Syria. All the tenants of one landlord usually live in villages like this one near Aleppo. Villages vary in size from a few hundred to several thousand depending on the size of the farm.

29:Dunn S-4 (1952)1952 MI Middle East
Syria MDi

COTTON IN SYRIA

ment, and the investors, inexperienced in farming and unequipped to deal 454
with adverse weather, lack of water, and heavy insect infestation, obtained
low yields. Many lost their own capital and borrowed money. 241

Some investors, who realize that their only chance of coming out on their original investment is to continue their operations and even to make additional investments, plan to expand operations. Future investment naturally will depend on current earnings which will be determined by production and world market prices.

Farmers who may be in a position to continue investing in agricultural development out of their own capital, however, will be a small minority. The need for credit will be great.

Limited credit usually is given to tenants by the landlords during the 452
spring and summer, but most farmers need more. In the past, additional
production credit has been extended largely by the merchants and money- 426
lenders at rates from 15 to 50 per cent annually. A few large landlords
borrow money from banks at rates as low as 7 and 8 per cent, but only against
excellent securities. Interest rates to the tenants who have less collateral
are usually higher. Merchants are discontinuing the practice of buying cotton [455]
before the crop is made at prices from 50 to 70 per cent of the future market
price because in many cases the farmers do not make enough cotton to fulfill
their contract.

The government has sought to meet the need for credit by creating an 652
agricultural bank, but the capital is limited and size and volume of loans are 452
small. In 1951, for instance, the bank loaned a total of only $5 million to
57,000 cultivators. Private groups are said to have loaned as much on cotton
in the Jezira alone.

LAND TENURE

Land available for cultivation is plentiful, but confused titles, excessive 423
concentration of ownership, and insufficient or restricted use of the state
domains hamper development.

The government has a major interest in agriculture and the tenure 423
problem. The Ministry of Justice reports that 23 per cent of the farm land
is owned by the state and in some of the larger farming areas the percentage 471
runs as high as 69 per cent. There is also a heavy concentration of land in 241
large units owned and operated by a few wealthy landlords, with 29 per cent
of the farm land in farms over 250 acres. Most of the large farms in the old [427]
agricultural areas are operated on a tenancy system, but many of the farms
now being established in the new areas of the Jezira are operated on a day- [464]
wage basis with mechanical equipment. This is especially true of wheat farms.
A strong middle class of farmers owns about one-third of the land in farms
from 25 to 250 acres, and many of them cultivate their land with the help of
tenants. Only 15 per cent of the farm land is owned in lots less than 25 acres.

In an effort to encourage landownership, stability of tenure, and an 425
interest in improvement of the land, a law was passed recently under which
state lands are to be sold on long-term, easy-payment plans to landless 471
farmers with a limit of 123 acres to a farmer. The plan was designed 311
especially to settle the nomads. The principal areas concerned are the state [n-6]
domains in the valleys of the Euphrates and Kabur Rivers, which were un-

29:Dunn S-4 (1952)1952 MI Middle East
Syria MDI

COTTON IN SYRIA

Another significant aspect of the land tenure problem is the financial 427
arrangements between the landlords and tenants.

Although there are many variations throughout the country, there are 241
three basic contracts.

In the first, where water is available by gravity flow for irrigation and the landowner furnishes only the land, he gets 50 per cent and the tenant gets 50 per cent of the gross yield. In the second type of contract, where the tenant installs pumps and operates them at his own expense and the landlord furnishes the land only, he gets 33⅓ per cent and the tenant gets the rest. In the third case, where the landowner furnishes only the land and the tenant drills artesian wells at his own expense, the landowner gets only 25 per cent of the gross yields. There are variations depending on the crops produced and on who furnishes seed, fertilizer, and equipment. With the growth of mechanization, there is a rising tendency for landowners to prepare the seed beds themselves with large tractors and to take a large share of the produce.

With the advent of mechanization, there is also a noticeable tendency to 464
wage-crop arrangements, particularly in the remote areas like the Jezira 241
where the population is sparse and where the only feasible arrangement for picking cotton is the employment of nomads by the day.

The greatest concentration of small cultivators who own and operate 471
their own farms is in the older farming areas in the southern part of Syria
around Damascus. Around Aleppo the farms are larger in size and owner- 241
operators are fewer in number.

MECHANIZATION

Mechanization is changing rapidly the primitive practices which still 241
dominate Syrian agriculture. The number of tractors has increased from 407
200 to almost 2,000 and more than 700 combines are in operation.

Most of the mechanical equipment is in the Jezira and the agricultural areas around Aleppo. Approximately half the tractors are being used in cotton areas.

To encourage further mechanization the government plans to extend
loans to farmers on a five-year basis to finance the purchase of agricultural [452]
equipment. So far most of the equipment has been bought privately and for cash.

The first few years have been difficult for the tractor farmers because of the lack of trained operators and the lack of adequate repair facilities, especially spare parts. Now the large manufacturers' agents are establishing modern service stations, repair stations, and mobile repair units. Consideration is even being given to organizing operator training programs.

RESEARCH AND EDUCATION

All of the agricultural missions stress the need for improvement in basic 654
research and educational programs. The United States-Syria Agricultural Mission has outlined a complete program for agricultural training, research, and extension. Some of the recommendations already have been adopted, such as the establishment of a separate Department of Agriculture. Agricultural

59: Allen et al 5-3 (1952-53) 1953 MI Middle East

Syria MD1

SYRIA

(Visited 13 - 19 January 1953)

131 58. The Republic of Syria covers approximately 55,700 square miles and has an
162 estimated population of 2,900,000 (including nomads 3,200,000), Arabic speaking and
mainly Moslems. There is at present no problem of over-population. Much of the
132 country is at present rain-fed dry land.

311 The total cultivable area is 12,500,000 acres of which about 1/3 is under cultivation. Many irrigation projects have been started or are in
312 contemplation. The systems of irrigation do not expose the peasantry in the same degree as in Egypt to bilharzia and the climate is invigorating for much of the year.

241 59. Agriculture and cattle breeding are the principal industries. A recent
231 government decree laid down that land not registered must be put at the disposal of the State, who will sell it at a low price in lots of 50 hectares. The land which thus to be acquired is State Domain which at various times has been appropriated and cultivated by the big land-owning families. The areas involved are said to be 2.3 million hectares of cultivable land and 3.6 million hectares of grazing.

423 The land which is to be redistributed must be exploited within 2 years from the
185 date of purchase and must not be resold, although it may be mortgaged to the Agricultural Bank. The Bank will give financial help for the purchase and development of the land.

60. The scheme has been criticized on the ground that in order to avoid a fall in production from the large estates now being cultivated through private capital and stop being put to the further exploitation of hitherto uncultivated land, the Government will require to make provision for the supply of capital and expert adv to new peasant owners. A scheme for the drainage of a considerable tract in the Jezirah area, known as the Ghab Swamp, is being drawn up as a result of a survey of the area by a foreign firm of engineers. This will also require large capital expenditure.

61. The financing of land redistribution schemes is outside the scope of our missio as is the furnishing of expert advice on new agricultural methods for the more successful exploitation of small estates, except in so far as agricultural extensio services can be combined with health and other services appropriate to community welfare organisation.

62. The possibility of the Syrian Government's applying for outside technical assistance for any of the above-mentioned purposes is a matter of high policy which we did not feel justified in discussing with the officials whom we had occasion to meet during our visit to Damascus.

647 63. Dr. Joukhadar, the Director of Labour and Social Affairs, gave the mission the
657 text of a project law (Appendix IV) that had been drafted in his department for establishing rural community centres, somewhat on the lines of those that exist in
185 Egypt.

64. The Decree contemplates that in each province a model centre be established to provide all requisite economic, health, cultural, social and administrative servic this being "the only institution that can undertake all the responsibilities and guarantee the success of a programme of village improvement which does not involve

63:Simmons et al G-5 (1941-1951) 1954
M1 Middle East
SYRIA MD1

The infant mortality is not known, but 165
local observers believe that it is at least 250
per 1,000 live births. In many rural villages
the mortality among children under 5 years
of age probably reaches 40 to 50 per cent.
Discrepancies in reporting are exaggerated
by the fact that certification of birth is not
required for infants dying during the first
year of life. The official infant mortality
rate for 1948 was 47.6 per 1,000 births for
the country, but 75 per 1,000 births in the
city of Damascus. Among almost 15,500
deaths registered in 1949, over 21 per cent
were of infants under 1 year and about 35
per cent of children under 5 years of age.

SOCIAL ECONOMY

Agriculture is the basis of Syria's econ- 433
omy. Over two thirds of the people are 241
dependent upon the land, and, in considera-
tion of the paucity of other natural re-
sources, its full utilization is a problem of
primary concern to the welfare of the coun-
try. Except in limited portions of the north- 132
western and the northeastern provinces, the 241
rainfall is deficient and erratic, and the
expansion of agriculture is contingent upon
the development of irrigation and more effi-
cient methods of production. Estimates of 311
the amount of cultivable land range from 241
10 to 21 million acres—from less than one
quarter to almost one half of the total land
area. A similar disparity is noted between
the figures quoted for the acreage now
under cultivation, but all sources agree that
less than one half of the potentially arable
lands are planted in crops. Most observers 311
believe that the land suitable for agricul-
ture approximates 12 to 14 million acres,
while the area under cultivation is between
5 and 6 million acres. Roughly 10 to 20 per
cent of the tilled land is irrigated at present,
but it has been shown that the farm acreage
could be more than doubled by increased
irrigation, associated with controlled settle-
ment, in the Orontes, the Khabour and the
Euphrates river valleys.

Foremost among the factors which im- 421
pede the promotion and the modernization

p. 139(B)

421 of agriculture are the present forms of land
423 tenure. The proportion of large- and small-scale
proprietors is not accurately known,
but at least one half of the total farm acreage
is owned by wealthy, and often absentee,
landlords, and worked according to
the share-tenancy system. In many northern
districts, particularly in Latakia and
Al Jazira provinces, the proportion is probably
closer to 70 to 80 per cent. Communal
ownership by tribes or villages is also common
644 in some areas. The constitution of
656 Syria provides for the creation of a landowning
peasantry through the redistribution
and the sale of state lands, but as yet
the percentage of independent farmers is
[610] relatively small. Many tenant families and
agricultural laborers live at subsistence
levels under conditions of extreme poverty.
361 Within recent years attempts have been
166 made to encourage the settlement of the
Bedouin tribes. Some now live in permanent
villages, where they combine cultivation of
cereals with the raising of sheep, migrating
seasonally with their flocks in search of
pasturage.

241 Wheat is the principal crop. Barley,
maize and other cereals are also grown, especially
in the areas of Homs, Hama, Hauran
and Al Jazira. Olives, fruits and vegetables
are important products on the oasis around
Damascus and in the coastal region. Cotton
is cultivated in Latakia, Aleppo and Al
Jazira provinces, while tobacco flourishes in
some sections of Latakia. Other industrial
crops include sugar cane, sugar beets,
sesame, castor oil beans and hemp. Sheep
and goats are abundant in all parts of the
country, but cattle are found chiefly in the
coastal highlands, on the Damascus oasis
and in the Hauran region in the southwest.
654 Limited programs for the improvement of
methods of farming and animal husbandry
are undertaken by the veterinary and the
agricultural services of the government.
874 Four agricultural schools are operated by
the Ministry of Agriculture—near Latakia,
Hama, Aleppo and Damascus. In the Damascus
region, the Near East Foundation

63:Simmons et al G-6 (1941-1951) 1954
M1 Middle East
SYRIA MD1

highly infected villages were situated on the 164
Gerahi and the Soublakh wadies. Similar 659
surveys in 9 villages in the Tell Abiad area 361
showed an average infection rate of 77 per
cent, with the greatest prevalence in the
villages on the Tell Abiad and the Slouq
branches of the Belikh. Infection is apparently 164
acquired early in life through swimming, 312
washing or other contact with streams 136
inhabited by infected snails. The intermediate
host, *Bulinus truncatus*, has been
collected from several localities.

Two mobile treatment teams were operated 744
by the Ministry of Health in the 164
infected areas in 1951. Plans for the inauguration
of a snail eradication program were
also under consideration.

Other Helminth Infections. Infection 164
with one or more varieties of intestinal 515
worms is prevalent in all parts of the country. 241
The insanitary habits of the people and
the frequent use of night soil as fertilizer
promote the spread of the different species.
Ascariasis is widely distributed. Infection 164
rates ranging from 30 to 86 per cent have 361
been demonstrated in Aleppo, Damascus,
Homs and Hama, as well as in the surrounding
villages. The infection is most
prominent among the children, in both
urban and rural areas. Trichuriasis is also
widespread, but enterobiasis and strongyloidiasis
tend to be sporadic.

Taeniasis is common. The beef tapeworm, 164
Taenia saginata, is enzootic among the 252
cattle, and the popularity of raw, or underdone,
meat in certain national dishes is responsible
for considerable human infection.
The pork tapeworm, *T. solium*, is sometimes
encountered among the Christian communities.
Occasional infections with the dwarf
tapeworm, *Hymenolepis nana*, are observed
in most districts.

Hydatid disease is not unusual. *Echinococcus* 252
granulosus is enzootic among dogs, 164
sheep, goats, cattle and camels. In studies
reported in 1936,[illegible] cysts were detected in
25 to 30 per cent of the sheep and the goats
examined in slaughterhouses in Aleppo,
Damascus and Homs. Infection was uni-

Relief and Works Agency for Palestine 657
Refugees and the Ministry in the Khabour 747
and the Belik river basins in 1950,[8, 9] blood
examinations were performed on small rep-
resentative samples of the population. All
age groups were included, although the
majority of persons tested were under 15
years of age. The parasite rates averaged 164
about 33 per cent in villages in the Belikh 361
valley, while in the areas under perennial
irrigation along the Khabour River and its
tributaries, they varied from 33 to 94 per
cent. In the rain-irrigated districts north-
east of Hassetché, the rates declined to from
12 to 16 per cent. In many localities the 164
malaria problem has been aggravated by the 241
introduction of rice cultivation. In some, as
in Ajaja, cultivation had to be abandoned,
and in others, it is prohibited within a
2-mile radius of the villages.

The malaria season extends from April 161
to November, with peaks of prevalence in
July and October, but some transmission
occurs throughout the year in most malari-
ous regions. The relative proportion of *Plas-* 164
modium vivax and *P. falciparum* infections 136
varies according to the season and from
place to place. *P. vivax* is usually respon-
sible for 75 to 80 per cent of the cases of
malaria in the Damascus area. *P. falciparum*
and *P. vivax* were identified with about
equal frequency, however, in the 1950 sur-
veys in the Belikh and the Khabour valleys.
In general, *P. vivax* predominates during
spring and early summer, but is superseded
by *P. falciparum* toward the end of the
malaria season. *P. malariae* infections are
rarely encountered.

Malaria control measures are undertaken 164
by the municipal authorities in Damascus, 144
Aleppo and a few other towns. Control pro-
grams, based upon residual spraying with
DDT preparations or Gammexane, are con-
ducted in towns and villages in limited areas
by the Ministry of Health, often in con-
junction with other agencies. In 1950, they
covered villages in Damascus and Hauran
provinces, the town of Latakia and a few
localities in Jebel ed Druz. The most exten-

p. 155(A)

Post-War Period, 1945 to 1954

Agriculture

During the post-war period both agricultural and industrial output increased rapidly, and although population growth was fairly large there seems little doubt that per capita output rose significantly. 1/ Similarly, although data are very scanty, there is evidence of an increase in consumption and an improvement in the standard of living. 2/ 433 511

In agriculture, the increase in output was achieved by extending the acreage of cereals and greatly expanding that of cotton; there was also some improvement in methods of cultivation, especially in cotton. The total cultivated area increased from 2,314,000 hectares in 1946/47 to 3,668,000 in 1952/53. 3/ the irrigated area increased more rapidly, from 257,000 hectares 4/ to 400,000 hectares. 5/ The proportion of fallow land seems to have remained unchanged, at one-third of the total. It may therefore be taken that the crop area increased by about 60 per cent. 241 311

The increase in the irrigated area was achieved partly by the irrigation projects discussed below, partly by installation by farmers of pumps drawing on river or underground water. In 1953, there were 7,500 pumps, of which 40 per cent were for river water and 60 per cent for underground water. The extension of rainfed crops was achieved mainly by mechanization. In 1953 there were 1,200 tractors, compared with 860 in 1951 and about 500 in 1948; 1,307 tractor ploughs, compared 312 241

1/ National income is estimated to have risen from 1,250 million Syrian pounds in 1950 to £1,410 million in 1953; during that period, the index of wholesale prices of raw materials in Damascus (1949 = 100) fell from 111 to 110. See Sami Wafa el Dajani, "al dakhl al Qawmi fi Suria", *Al Abhath*, (Beirut, December 1953); Ministry of Agriculture, *A Report on the Development of Agricultural Production and Marketing in Syria*, and Ministry of National Economy, *Statistical Abstract of Syria, 1953* (Damascus, 1954). A breakdown for 1950 shows that 44 per cent of the total was contributed by agriculture and animal husbandry, 13 per cent by commerce, 10 per cent by industry, 9 per cent by transport and communications, 7 per cent by government services, 5 per cent by rents and 11 per cent by other activities (Dajani, *op.cit.*).

2/ Per capita annual consumption of cotton, woollen and rayon fibres is estimated to have risen from 4.2 kilogrammes in 1951 to 4.6 kilogrammes in 1952 and 5.1 in 1953; the figure for Lebanon and Syria combined had previously risen from 3.9 kilogrammes in 1948 to 4.8 kilogrammes in 1950 (Food and Agriculture Organization, *Monthly Bulletin of Agricultural Economics and Statistics*, Rome, January 1953). Output of tobacco products increased from an average of 1,658 tons in 1945-47 to 2,075 tons in 1950, 2,448 in 1952 and 2,659 in 1953.

3/ Bureau des documentations Syriennes et Arabes, *La Syrie économique, 1953* (Damascus, 1954), mimeographed.

4/ Sir Alexander Gibb, *Economic Development of Syria* (London, 1947).

5/ Of these, some 250,000 hectares were irrigated by flow and 150,000 hectares by pumps.

241 with 1,032 in 1952; and 547 tractor planters, compared with 471. 1/ There were also, in 1952, 381 combines, 135 threshers and 108 harvesters. 2/

243 242 As table 50 shows, most of the increase in acreage was in cereals. Wheat and barley yields continued to fluctuate violently, according to the amount of rainfall and weather conditions, but have showed no marked trend and, save in exceptional years such as 1949, have been well below a ton per hectare. Apart from mechanisation, little has been done to improve methods of cultivation, apply fertilisers or use improved seed except in El Jezire, where high-yielding improved seeds and fertilisers are sometimes used. Hence, in the post-war period, output of grains has increased in the same proportion as acreage, or only slightly more. 433 241 The expansion in cotton acreage, though smaller in absolute terms, was proportionately much greater; 3/ the acreage rose to 25,000 hectares in 1949 and 78,000 in 1950; the high prices prevailing in that year and the great profits made by cotton planters sent acreage up to 217,000 hectares, partly at the expense of wheat cultivation. The sharp decline in yields in 1951 and the steep fall in price in 1951 and 1952 caused heavy losses and led to a decline in acreage. Improved cotton prices and greater experience in cultivation once more caused an expansion in 1954.

241 The experience of the past four years has served to point out the potentialities and limitations of cotton cultivation in Syria. During the 1950-51 boom, cotton cultivation spread to most parts of the country, but subsequent events have shown that it is unsuited to many of them. In the Hauran, inadequate moisture has caused farmers to revert to wheat, barley and leguminous crops; in the Latakia region, soil and climate have also proved unfavourable. In the Damascus region, cotton cultivation has been practically discontinued. In the Aleppo region, as a result of the excessive costs of pump irrigation, cultivation is mainly confined to rain-grown cotton. 4/ In many parts of El Jezira, rice has replaced cotton owing to the shortage of labour. At present, cotton is localized chiefly in the Hama and Salamiye districts in central Syria, in the Hassetche district in El Jezira and in the province of Aleppo. About two-thirds of the total area is irrigated. Yields are about twice as high on irrigated as on rain-fed land, and the Syrian average, having almost doubled since the pre-war period, is one of the highest in the world. 5/

1/ Ministry of Finance, *Budget Note, 1955* (Damascus, 1955).

2/ Figures obtained from Ministry of National Economy.

3/ Large-scale cultivation of cotton began in 1924, increased rapidly until 1931 and after a sharp fall during the depression reached its pre-war peak of 40,000 hectares in 1936. In this period, American type cotton replaced native varieties. During the Second World War, acreage once more declined, owing to the shift to grains.

4/ Bureau des documentations syriennes et Arabes, *Etude spéciale sur le coton syrien* (Damascus, 25 November 1952, mimeographed).

5/ Yields per hectare rose from 221 kilogrammes in 1951 to 243 in 1952, 363 in 1953 and 389 in 1954.

67: United Nations S-5 (1945-1954) 1955 MI Middle East

SYRIA MDI

241
433

Table 50. Syria: Area and Production of Principal Crops, 1934-38, 1945, 1950 and 1952 to 1954

Crop	1934-38	1945	1950	1952	1953	1954
Area (thousands of hectares):						
Wheat	473	750	952	1,167	1,314	1,334
Barley	275	348	416	357	438	544
Olives[a]	6[b]	9	9	9	10	...
Grapes	42	56	68	68	70	...
Cotton	32	18	78	169	128	187
Rice	1	7	7	3	5	10
Vegetables	...	...	19[c]	21[d]	22[e]	...
Industrial crops[f]	...	...	12[c]	15[d]	15[e]	...
Production (thousands of metric tons):						
Wheat	459	415	850	900	870	800
Barley	290	248	322	467	472	561
Olives[g]	5	17	4	7	11	...
Grapes	170	169	245	157	243	...
Cotton	6	4	36	45	47	73
Rice	3	15	24	5	16	25

Source: Food and Agriculture Organization, Yearbook of Food and Agricultural Statistics (Rome); Ministry of National Economy, Statistical Abstract of Syria (Damascus, 1953); Ministry of Finance, Budget Note, 1955.

a/ Millions of trees.

b/ Average of 1937-38.

c/ 1950/51.

d/ 1951/52.

e/ 1952/53

f/ Excluding cotton.

g/ Thousands of metric tons of olive oil.

SYRIA MDI

472 241 433 The extension of cereal and cotton cultivation has been carried out by private enterprise. Most of the initial capital was provided by landlords, but merchants and banks soon started financing the crops; in 1951 it was estimated that some £S 200 million to £S 300 million had been required to finance the planting and moving of the cotton crop, of which all but £S 50 million came from outside agriculture. In recent years, the volume of advances granted and bills discounted by the principal banks rose by about £S 50 million between the seasonal low of July or August and the peak of the cotton season, in November. But the bulk of the capital needs are still supplied by non-banking sources. Private initiative also set up the 31 saw gins and 1,767 smaller gins which were operating in 1952 and which can handle about 300,000 tons of unginned cotton. It has been responsible for the introduction of the various types of American cotton seeds, of which the most widely used is the Lone Star variety, which produces cotton very similar to Egyptian Ashmuni. Private enterprise also took the lead in utilizing chemical fertilizers, imports of which increased from a negligible amount in 1950 to 5,000 tons in 1952, 11,000 in 1953 and 13,000 tons in the first nine months of 1954.

Another field in which private initiative has taken the lead is that of beet growing. The sugar refining company extended advances to growers, supplied them with free seeds and instruction, sold them fertilizers and offered them high prices for their output. By 1953, as a result, 4,500 hectares had been planted to beets, giving a crop of 60,000 tons; 1/ a crop of 80,000 tons was anticipated for 1954. 2/

654 241 The Government has rendered valuable assistance to agriculture, especially to cotton growers. Following the very poor crop of 1951, when over-extension and pests combined to reduce cotton yields sharply, a Cotton Office was established in January 1952. On its staff it had Egyptian experts recruited directly by the Government or sent by the Food and Agriculture Organization of the United Nations. Several decree laws of 1952 fixed cotton acreage and subjected its cultivation to Government authorization; they limited the number of authorized varieties to six and forbade the mixing of varieties; regulated ginning, in order to disinfect, select and classify seeds; made obligatory the spraying of cotton plants with pesticides, which in case of negligence is to be carried out by the Government at the farmer's expense; set minimum standards and established grades for the classification of cotton. 3/ In 1953, the Government forbade the use of seeds not

---

1/ Average yield of irrigated land is two to three tons per hectare, and of non-irrigated, 0.5 to 0.75.

2/ Information supplied by Ministry of National Economy. Output of fruits and vegetables has also increased in recent years, but little progress has been made in livestock breeding. An estimate of agricultural income in 1953 put the value of the wheat crop at £S 305 million (a figure based on an estimated production of 1,355,000 tons against a final estimate of 870,000 tons); of barley at £S 7 million; of cotton at £S 121 million; and of other crops at £S 200 million, giving a total of £S [illegible]33 million. Livestock and livestock products were put at £S 240 million (*La Syrie économique, 1953*).

3/ *Etude spéciale sur le coton syrien.*

purchased from the Agricultural Bank. There is no doubt that these measures have 654
helped to raise cotton yields and quality. 241

Some help has also been given to growers of cereals, by the importing and sale at half price of seed wheat from France and Italy; 1,300 tons were imported in 1953. The Government has set up five experiment stations, for fruits, cereals and cotton, has expanded agricultural education and has begun extension work among farmers.

The Government has also helped growers financially, by purchasing spraying equipment and pesticides, reselling them to farmers and advancing loans for the purchase of pesticides. The capital of the Agricultural Bank was raised from £S 5.8 million in 1940 to £S 7.2 million in 1945, and £S 21.6 million in 1953. Loans advanced by it increased from £S 268,000 in 1940 to £S 1.6 million in 1945, and £S 12.5 million in 1953. In 1953, the number of borrowers was 20,300 and the recovery rate was 93 per cent. The bank also made loans in kind - cotton and rice seeds, spraying equipment, pesticides, tractors, ploughs and pumps. 1/

On the other hand, some government measures concerning marketing and exports have had adverse effects on growers. 656 The Cereals Office's attempt to collect grain for the use of the urban population, at below market prices during the winter of 1951/52, following a very poor crop, led to hoarding, and wheat had to be imported at high prices. In 1952, the Government ordered growers to deliver to the Cereals Office one ton of wheat, at £S 230, for every two tons exported; this led to a rise in the export price to above the world level, hampering exports. In 1953, this arrangement was replaced by a lower export tax on wheat and barley. It would appear that these taxes were borne by growers, not by merchants or foreign consumers, and hence that they constituted a subsidy from rural areas to the towns. With the fall in world prices of wheat, the Government abolished the taxes in May 1954. Similarly, it would seem as though the tax on cotton exports introduced in 1952 has been shifted to growers.

Industry

The rapid post-war industrial growth was chiefly due to private initiative 433
but much government protection and some financial assistance were required by several industries. Most of the new capital was provided by merchants, but there 472
was also an appreciable amount of reinvestment of industrial profits.

1/ Statistical Abstract and La Syrie économique, 1953. In 1953, the bank was authorized to make loans against warehouse receipts issued by the Cereals Office for barley and wheat delivered to it. A rate of 6 per cent is charged on these and all other loans.

Development projects

652 During the period 1945 to 1952, inclusive, Government expenditure on development totalled £S 301.4 million. Of this £S 115 million was spent through the budget, £S 59.5 million was provided from the Reserve Fund, and £S 126.8 million came from loans made by the bank of issue. 1/ The 1954 budget provided £S 71.6 million for development, of which £S 17.2 million were to be spent through the ordinary budget and the balance to come from various extra-budgetary sources. The preliminary cost of projects under study was put at £S 400 million. 1/ Budget appropriations have been spent by Government departments, but projects financed by extra-budgetary expenditure have generally been carried out by special boards created for the purpose. 2/ No foreign financial assistance has been received by Syria.

Agricultural, irrigation and power

652
2411
312 Budgetary expenditure on agriculture and irrigation from 1945 to 1952 totalled £S 37.9 million, of which £S 25.3 million went to irrigation and the balance to land survey, agricultural schools, model farms, agricultural and veterinary centres and other projects. Extra-budgetary expenditures included £S 5.7 million for irrigation, £S 21.3 million for increasing the capital of the Agricultural Bank, and £S 6.0 million for pest control.

The largest completed irrigation project is that on the Orontes River, in the Homs-[illegible]a region, which irrigates 22,000 hectares. Further works are under study to irrigate an additional 20,000 hectares upstream; their cost has been estimated at about £S 20 million. Other recently completed projects include that on the Quwaiq River, south of Aleppo, which irrigates 15,000 hectares and provides flood control, and the project on the Mzerib, a tributary of the Yarmuk River, which irrigates 2,500 hectares; possibilities for extending both schemes are under study. Irrigation works on the Khabur River, in El Jezira, are very near completion; they have cost £S 9 million and will irrigate 9,000 hectares; considerable further expansion in this scheme is possible and preliminary studies have been made.

Other projects nearing completion include the drainage of the Rouj swamps, near Idlib; the project also provides for the irrigation of 4,000 hectares and the generation of electric power; total costs are put at £S 4 million and completion is scheduled for 1956. The Sinn River project, on the coast south of

---

1/ Awad Barakat "Recent Economic Developments in Syria", Middle East Economic Papers, 1954 (Beirut, 1954).

2/ The most important items of expenditure not discussed in this section are £S 35 million for supplying Aleppo with drinking water from the Euphrates, a project which was scheduled for completion in 1954; £S 33 million advanced to municipalities, for water, electricity and public buildings; £S 9.5 million advanced to nationalized electricity companies; £S 26.7 million for Government buildings; £S 8 million for hospitals and clinics, and £S 5.4 million for schools.

SYRIA MDI

Latakia, is to irrigate 5,000 hectares at a cost of £S 2.6 million; the scheme should be completed by the end of 1955. Projects under study include a scheme on the Barada River, near Damascus, to irrigate 5,000 hectares and provide a capacity of 10,000 kilowatts, at a total estimated cost of £S 12 million; the Yusef Pasha dam, on the Euphrates, which would extend irrigation by 100,000 hectares and provide a capacity of 45,000 kilowatts, at an estimated cost of £S 150 million; and a small multi-purpose project on the Kabir River, north of Latakia. 652 241 ● 312

The most important project under way is that on the Ghab, on the Orontes north of Hama. The objective is to reclaim by drainage some 26,000 hectares of land and to irrigate by gravity a total area of 65,000 hectares, 43,000 of which had not been irrigated before.

The project also includes the building of four hydroelectric stations, with a capacity of 20,600 kilowatts and an estimated annual output of 80 million kilowatt hours; a thermic generator with a capacity of 9,500 kilowatts; and 700 kilometres of roads. Total costs, exclusive of electric installations, are estimated at £S 140 million, of which £S 45 million are for drainage, £S 55 million for irrigation and £S 37 million for roads and bridges. The hydroelectric plants are estimated to cost another £S 17 million and the thermic plant £S 7.6 million. The Government expects to recover its outlay on the scheme by selling, for an estimated £S 150 million, 30,000 hectares of land which it owns in the region and by levying a small irrigation fee. The scheme is expected to raise gross agricultural income by £S 91 million and net income by £S 78 million. Completion is scheduled for 1960. 1/ 652 312 377 241

The Ghab Project Administration was established in 1951, and in 1953 it was authorized to borrow £S 25 million from the Banque de Syrie et du Liban, at 2 per cent interest. A firm of Netherlands consultants, hired by the Government to prepare an over-all plan for the Ghab, presented its report in May 1953. In September 1953 a contract was awarded to a Yugoslav firm for the deepening of the Orontes channel, at a cost of £S 3.3 million. It is expected that contracts for other parts of the project will be awarded soon.

The total area of irrigation projects recently completed or approaching completion is 57,000 hectares and that of schemes planned but not yet begun is 278,000. The total irrigable area, including that at present irrigated, is estimated at 750,000 hectares. 2/.

The total cultivable area in Syria is put at 5 million hectares, of which one million are at present not cultivated, while 1.6 million are left fallow each year under the prevailing triennial rotation. Present plans call for intensifying production by using leguminous crops to replace the period of fallow, 311

1/ "The Ghab Project", by Abdel Basit Khatib, Director General of the Ghab Project Administration (mimeographed document, Damascus, October 23, 1954). See also Abdel Basit Khatib Mashru al Ghab (Damascus, October 1953).

2/ Soubhi Mazloum, "Les Irrigations en Syrie", Annual Bulletin of the International Commission on Irrigation and Drainage, 1953, and "Al mashari al maia fi Suria", Al Hayat, 31 July 1954 (Beirut).

SYRIA MDI

311 by planting forage crops, and by increasing the use of fertilizers and improved seeds. 1/ The Government is planning to increase its distribution of selected wheat and other seeds, to expand its agricultural schools and its student missions to foreign universities, and to intensify the activity of its experimental stations and its extension services.

654
241 Among the obstacles to expansion of output are high production costs, owing to shortage of labour in certain areas and to high fuel prices and maintenance charges for machinery, and also high transport costs. 2/ Various measures are being taken to improve communications, provide storage and reduce the purchase and operating costs of agricultural machinery. 3/

● 241
423 Another great obstacle to agricultural development is the system of land tenure. In 1947 it was officially estimated that of 6.1 million hectares of privately owned land, 38 per cent was in holdings of over 100 hectares, 43 per cent in holdings of 10 to 99 hectares and 19 per cent in holdings of under 10 hectares. 4/ The greater part of large holdings is rented on short leases to sharecroppers, whose poverty and insecurity make it difficult for them to improve methods and increase output. The Government is preparing a law regulating relations between landlords and tenants and between farmers and labourers. 5/ In 1952 and 1953 decrees were passed regarding the distribution of lands in the State domain to cultivators with small farms and the expropriation of occupied areas on such land in excess of a certain figure. 6/ This land was to be available for cultivation by farmers, in lots of 10 hectares of irrigated or 50 hectares of non-irrigated land, on very generous terms. A start has been made in distributing land in El Jezira to landless farmers and nomads; by March 1954 some 25,000 hectares had been distributed.

1/ It is estimated that the yield of wheat could be fairly easily raised by 60 to [illegible] per cent and that of barley by 50 to 60 per cent. The discrepancy between the average yield of olives, 20 kilogrammes per tree, and that of high yielding trees, 50 to 60 kilogrammes, also points to possibilities in that field; it is, moreover, believed that the average oil content of olives could be raised from 11.5 per cent to 15 per cent (unpublished study by the Ministry of National Economy).

2/ In 1953, transport costs of a ton of barley from El Jezira to Latakia were £S 50, a figure equal to the cost of production. High transport costs also greatly raise the price of petroleum products used in agriculture.

3/ Ministry of Agriculture, "A Report on the Development of Agricultural Production and Marketing in Syria" (mimeographed document, Damascus, 1954).

4/ By the end of 1954 half the area of Syria had been surveyed; the corresponding figures within that area were 49 per cent, 38 per cent and 13 per cent. Conditions vary greatly: in Damascus, Latakia, Jebal Druze and Hauran provinces, small and medium properties prevail; in the Aleppo, Homs, Hama, Jezira and Euphrates provinces large properties and State domain account for the greater part of the land.

5/ Ministry of Agriculture, op cit.

6/ This was fixed, in the 1952 decree, at 150 hectares in the Jezira, Euphrates and desert areas and 50 hectares in other parts of Syria. In 1953 the limit was raised to 200 hectares, irrespective of location.